ISCTE Business School
Instituto Universitário de Lisboa

HOW MULTISENSORY EXPERIENCES IN VIRTUAL ENVIRONMENTS AFFECT INTENTION TO RETURN: THE ROLE OF COGNITIVE FLEXIBILITY, SENSE OF POWER AND PERSONALITY TRAITS

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Dissertation submitted as partial requirement for the conferral of master's in marketing

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October 2019

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Abstract

The technology advances made every day are creating opportunities for business. Virtual Reality has been the focus of several studies. However, virtual reality has been stated to fail in implementing some senses, such as tactile, smell and taste. In this study, we cross two sensory experiences, one with the senses of sight and sound and the other with the sight, sound and smell. The experience takes place in a Virtual Café and measures the impact it has on the intention to return. The choice of the different sensory experiences was based on the concepts of proximal and distal senses. For the purposes of the study, this dissertation further analyses the concepts of Sense of Power and Cognitive Flexibility and Personality traits is introduced as a moderator in this relationship. The type of sensory experience is introduced and used as a moderator on the relationship between Sense of Power and Intention to Return (behavior).

This study concludes that multisensory experiences in a virtual environment, have no impact on return intentions. However, this study also concludes that cognitive flexibility has a positive impact on sense of power and that personality traits plays as a moderator in the relationship between the two variables. Furthermore, this study findings suggested the notion that senses can be psychologically more proximal or distal based on the maximum physical distance typically required for a stimulus to be sensed also applies to virtual reality environments.

Keywords: Virtual reality, multisensory, psychological distance, sense of power, cognitive flexibility, intention to return, personality traits

JEL classification system: M31; M37

Resumo

Os avanços tecnológicos concretizados todos os dias estão a criar oportunidades para as empresas. A Realidade Virtual tem sido o foco de diversos estudos. Contudo, a realidade virtual tem sido apontada pela inexistência de alguns sentidos, tais como o tato, cheiro e paladar. Neste estudo, cruzamos duas experiências sensoriais, uma com os sentidos da visão e audição e a outra com os sentidos da visão, audição e cheiro. As experiências tomam lugar num café virtual e mede o impacto que tem na intenção de retorno (intention to return). A escolha das diferentes experiências sensoriais teve por base os conceitos de sentidos mais próximos e sentidos mais distantes. Para o objetivo desta tese, vão ser também analisados os conceitos de sentimento de poder e flexibilidade cognitiva e as características de personalidade são introduzidas como moderador desta relação.

Posto isto, este estudo conclui que as experiências multissensoriais num ambiente virtual, não têm impacto na intenção de retorno. Contudo, o estudo conclui também que a flexibilidade cognitiva tem um impacto positivo no sentimento de poder e ainda que as características de personalidade têm um papel de moderador na relação entre os dois. Além disto, este estudo sugere que a ideia de que os sentidos podem ser psicologicamente mais próximos ou distantes, com base na distância física normalmente necessária para um estímulo ser sentido, também se verifica em ambientes de realidade virtual.

Palavras-chave: realidade virtual, multisensoralidade, distância psicológica, sentimento de poder, flexibilidade cognitiva, intenção de retorno, características de personalidade

Sistema de classificação JEL: M31; M3

Acknowledgements

Throughout the process of writing this thesis, there have been several people who deserve to be mentioned and without their support this project would have not been possible.
In first place, a very special thank you to my supervisors Professor Sandra Loureiro and Professor João Guerreiro. Their constant availability, support and motivation throughout the whole process of the thesis was indispensable. Thank you for never letting me quit.

Further, I would like to thank my parents and my siblings for the constant support in this specific journey. To all my friends and colleagues who took the time to be a part of my experience. To all the students in ISCTE who manage to make time in their studies to help me. A special thanks to the unknow student who for a whole day made her goal to obligate all her colleagues to come and be part of my experience. Whoever you are, thank you so much.

Finally, thank you to my closest ISCTE colleagues. Thank you for being in the same boat as me, for pushing each other and making sure each one of us finished this masters in time and successfully!

Thank you!

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1. Introduction

The physical surroundings and particularly the physical environment, was referred by Biner (1992) as being able to affect people in physiological ways particularly for service businesses such as hotels, restaurants, professional offices, banks, retail stores, and hospitals.

As Lindstrom (2008) stated, a singular brand must always be improved and maximized in order to offer a full emotional and sensorial experience. It is not enough to visually present a product or service in an advertisement. It is important to associate a sound, music for example, or words and powerful symbols. According to the author, the combination of visual and audible stimulus has a much bigger impact but to keep a strong brand, it is necessary to activate consumer's five senses. In his book Brand Sense, Lindstrom highlights that vision and hearing are not enough to impress consumers. The touch, smell and flavors are crucial in the construction of a truly relevant brand. The usage of the five senses and a multisensory atmospheric retail is also very important and have an huge impact on shopping behavior in both cognitive and affective manners (Spence, Puccinelli, Grewal, and Roggeveen, 2014).

Spence (2002) stated that a big part of the best experiences people have lived in life are inherently multisensory. Mattila and Wirtz (2001) added that the more the atmospherics in a store are multisensorial congruent the more interesting and pleasant they will be characterized. The same is thought to happen for online environments (Dinh et al., 1999; Feng, Dey, and Lindeman, 2016; Liu, Hannum, and Simons, 2018; Obrist et al., 2016; Spence et al., *2017 cited in* Petit, Velasco and Spence, 2019)

There has been an emergence of new multisensory devices that give customers the chance to stimulate their senses over the Internet. Even though these technologies are not yet fully commercialized, they allow the possibility to dream of an online atmosphere more connected to the senses (Petit, Velasco and Spence, 2019). Along with other technological developments, Augmented Reality and Virtual reality are two relevant computer-based technologies that have been on the process of developing and are being used more each day by the top companies around the world. Focusing on retailing, virtual reality can bring numerous advantageous for companies and consumers. An increasing number of traditional

companies use virtual technologies to support and improve their marketing techniques and are adopting multi-channel strategies for retailing (Saren et al. 2013; Bradford et al. 2017; Müller-Lankenau and Wehmeyer 2005 *cited in* Lau and Lee 2018). The use of Stereo VR, for example, in retailing is expected by Smolentsev et al. (2017) to distort the line between real shopping and online shopping due to its features such as interactivity, immersion in experiences and the sensory feedback.

1.1. Research Objectives

In the rapidly evolving retail landscape, with newer technologies, newer business models and big data/predictive analytics, the shopping process is on the way to great improvements into an unknown "shopping realm". In this digital age, customers are more empowered and informed than ever before. They demand better, cheaper and most of all more efficient products and services (Conrad, 2017). With the increase of demand from consumers, companies need to make changes, to evolve. To be able to respond to consumers' needs and beyond.

The company's responses for these demanding consumers, among other things, can focus on technology development, such as the Internet of things, virtual/augmented reality, artificial intelligence, and robots/drones/driverless vehicles (Deloitte, 2016). It can focus on sensory marketing or in developing ways to capture consumers attentions through the usage of the five senses because today, the present brands in market attract current and potential customers on sensory basis. As Hulten, (2017) stated, it is obvious that the five human senses should be the foundations of all global multi-sensory brand-experiences.

Finally, another aspect that company's need to take into account are its customers individual' differences. In a company, the principal goal of a seller is to increase and sustain customer satisfaction, and to do so it is necessary to know how customers are expected to respond to certain marketing actions (Rexha, 2000). Each individual will most likely have different responses to a certain stimulus. These responses can be triggered through their personality traits, for example. The influence of personality traits on satisfaction, loyalty, and word of mouth have been studied by Hanzaee and Farzaneh (2012) and indicate that agreeable people tend to be more satisfied and committed to the relationship with a brand. The customer's capability in adapting to circumstances, also known as cognitive flexibility which Dennis &

Vander Wal (2010: 242) defined as *"the ability to switch cognitive sets to adapt to changing environmental stimuli*" are also important factors. The store environment, the atmosphere and the type of brand communications are also factor to take into account and that can have an effect on consumers perception of power. For example, Madzharov, Block and Morrin (2015) studied how ambient scents affect consumers' spatial perceptions in retail environments, which in turn influence customers' feelings of power.

Madzharov, Block and Morrin (2015) studied how ambient scents in retail environments influence customers' sense of power. Elder, Schlosser, Poor, and Xu (2017) focused their study on how imagined senses can be psychologically proximal or distal based on the actual physical distance that is usually required for a stimulus to be sensed. Studies on VR have been focused on engagement and interactivity (Mollen and Wilson, 2010), telepresence (Steuer, 1992), purchase behavior (Waterlander, Jiang, Steenhuis and Mhurchu, 2015), experience (Novak, Hoffman, Donna, and Yung, 2000) among others. Even with the development of studies and improvements made every day, there is still some gaps in VR. Lombart et al. (2019) highlighted that even with actual technologies and the possibility of interaction with virtual objects in VR, it remains still quite difficult to replicate the tactile sensation that a person has when in touch with real objects. Berg and Vance (2017) stated that there is a wide variety of display technologies which purpose is to deliver information to people's senses, mainly sight, sound and touch. Regarding smell and taste, this type of displays has received less attention comparatively. When it comes to retail, Peukert et al. (2019) mentioned the criticism on e-commerce and VR for the inability to evaluate products, for example, feeling, touching, and trying out products, when in comparison to a traditional in-store. Even if the interaction with objects in a virtual environment is possible, with actual technologies it is still extremely hard to replicate the tactile sensation that a person has when touching a real object (Lombart et al., 2019).

These studies highlighted the big gap that still exists in VR regarding the lack in sensations of the five senses. With this thesis, there is a contribution to the literature by the application not only of the concepts of sense of power, cognitive flexibility and intention to return in a virtual environment, but also by exploring a multisensory experience in a virtual environment and its impact in return intention.

From these constructs arise the research questions, on the basis of which the entire study in question will be developed:

- Can cognitive flexibility positively impact sense of power?
- Can sense of power positively impact intention to return?
- Can psychological distance moderate the effect of sense of power in intention to return?
- Can personality traits moderate the effect of cognitive flexibility on sense of power?

In this vein, the main objectives of this study are: (i) explore how cognitive flexibility influences sense of power and consequently the intention to return in a context of a virtual reality coffee shop; (ii) analyze the moderating effect of the different sensory experiences in the relationship between sense of power and the intention to return (iii) analyze personality traits as moderator of cognitive flexibility and sense of power.

To achieve these objectives successfully, it is important to contextualize the problematic. The theoretical background section will start to address the digitalization trend, the emergence of online businesses and e-commerce as a reaction to the ever-developing technological circle and the perceived risks associated with the online consumption. As a response to these risks, there will be a focus on the emergence of alternatives with a special focus given on virtual reality, which will be tool used in the experiment for this dissertation.

2. Theoretical Background

2.1. Digitalization and e-commerce

In the rapidly evolving retail landscape, consumers' needs still drive their purchase decisions. Shoppers make most consumption decisions, yet newer technologies, newer business models and big data/predictive analytics suggest that the shopping process is on the way to great improvements into an unknown "shopping realm". The result is a powerful need to understand critical retailing areas in which innovations are changing the game, so that we can better understand where the retailing field will be evolving in the future (Grewal, Roggeveen and Nordfält, 2017). Due to these technological advances, not only is the retailing evolving so are the consumer's behaviors. As mentioned by Hong and Cha (2013) the fast development and growth of e-commerce has been entrenched largely because of its convenience and specially because of the money, which it offers to consumers. On other hand generates concerns about privacy and security issues and other instability issues such as product quality.

A mobile device allows consumers to connect to the digital world from wherever they are in the physical world, and therefore it strongly affects the customer journey (Verhoefet al., 2017). The fast growth in the use of mobile devices has changed how consumers behave and shop online. There has been a significant increase in sales and penetration of smartphones and tablets. In 2016 mobile devices accounted for 65% of the total time consumers spent on digital media (Haan et al., 2018).

2.1.1. Perceived Risks of shopping online

Risk is considered to be one of the main and most important elements in the buying behavior, weather it is on traditional or online platforms (Kumar and Grisaffe, 2004; Faroughian et al., 2012). When buying products on internet, the main risks regards privacy issues (Pantano, Iazzolino, and Migliano, 2013), the level of security one perceives when using the online environment (Taylor and Strutton, 2011) and also the concern when it comes to the after-sales service warrantee compared with more traditional ways of shopping (Hong and Yi, 2012). Another limitation mentioned by the same authors concerns the fact that a customer is not able to examine or to touch the product they want to purchase before purchasing. This is a risk

that the customer does not have when shopping in physical stores. In fact, to reduce this risk, Kim, Donald, and Rao (2008) studied that in several cases, online consumers only decide to finish purchase after visiting the physical store and evaluate the products they want to buy.

Other risks may vary according to the devices. For example, mobile device is recognized as riskier for online shopping and for payments (Chin et al., 2012). For example, due to the smaller screen sizes of mobiles it might not allow a proper comparison of alternatives. It may also highlight the concerns related to the security of payment information. These perceived risks may lead consumers to switch between different devices (Pappas, 2017).

2.1.2. Emergence of alternative realities

To address issues in online shopping such as the risk of quality of the product, several researchers studied virtual technologies and concluded it enhance the customer's shopping experience, not only by influencing the aspect of product quality but also consumer satisfaction, permanence in the store, frequency of visits and visualized products (Catterall and Maclaran, 2001).

Virtual stores were described by Lee (2007) as having several advantages. Not only time saving aspects, but also the reduction of operational costs, a wider variety of products offering compared to traditional stores and the possibility for consumers to have access to the store directly from their place. Yoon and Kim (2007) stated that a customer's choice to purchase from an online virtual store, as well as in a traditional one, is affected by several attributes. The authors grouped some of the attributes in three dimensions: time, place and acquisition. The place dimension regards the convenience of the place, making it easier for customers and in line with their preferences; the time dimension highlights the customer's lack of time, time pressure or purchase delivery time (Lee, 2007); finally, the acquisition dimension has to do with the customer's opportunity to acquire products in an simpler and easier way (Yoon and Kim, 2007).

Since this type of immersive environments were proved to increase consumer's satisfaction and their shopping experience, it can be used as a ground-breaking tool for the expansion of new type of store with the insertion of advanced technologies such as virtual and augmented reality (Pantano and Servidio, 2012).

2.2. Virtual Reality

As Harry Houdini said, “What the eyes see, and the ears hear, the mind believes” (Houdini, n.d.). Virtual reality is a human experience and this technology is resolutely designed to take benefit of the human information processing system in order to mimic how people interpret the world they are immersed in (Berg and Vance, 2016). The same authors described virtual reality (VR) as being a group of technologies that allow individuals to immerse in an experience of a world beyond reality. They further call it a human experience.

A VR experience is an encounter in which the user is effectively immersed in a responsive virtual world (Brooks, 1999). VR was also described by Ulrich (2015) as a new, complex form of communication that can influence people and change the way they comprehend the real world.

Meißner et al. (2017) described an immersive virtual environment as one in which the user is perceptually surrounded by the virtual environment. To be visually immersed in this environment VR, head mounter displays (HMD) are available to consumers to visually block out the real world (Manis and Choi, 2018). Lemley and Volokh (2014) studied that in a VR environment, people tend to physiologically respond to actions done to them in VR. The subjects who see themselves getting hit in a VR experience respond with skin conductance and heart rate levels as if they were in fact, getting hit. Even though it does not actually cause real injuries, the instant reaction to the virtual contact is, for many people, much like the reaction to physical contact. These results happen even when the subject is male, and their VR “body” is female, meaning that they are aware that it is not “their real” body.

Pantano and Servidio (2012) suggested that these new innovative systems such as VR may be used to minimize the consumer’s cognitive load by providing suitable and user-friendly visual interfaces and help the customer to finalize the purchase intention. According to the same authors, these factors might satisfy consumer’s requirements and make the products displaying more evocative, with consequences on both the effectiveness of the mediated message and the cognitive response.

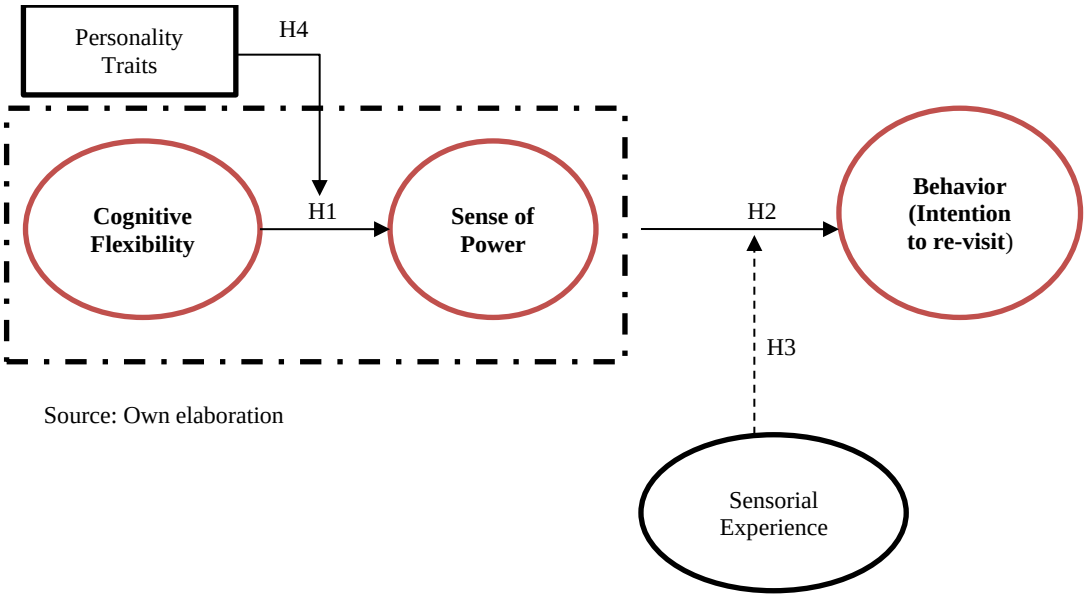
Even though there is a long list of advantages of Virtual Reality, there is still some risks and gaps. As Sallomi and Lee (2016) mentioned, VR could take you into the depths of the rain forest, you could see the forest ground or look up to the trees, but you would not feel the humidity of the forest, experience the smells or touch the plants. Even though haptic devices

(devices that can simulate the sense of touch) can be used to increase the experience, it is still very distant from the sensations felt in real life and it is still extremely hard to replicate the tactile sensation that a person has when touching a real object (Lombart et al., 2019). Furthermore, one of the critics made to VR regards the lack of ability to evaluate a product, the lack of ability to touch the product and feel the fabrics, trying it out, when in comparison to a real traditional store (Peukert et al., 2019).

Not only the lack of senses has been a weaker point to mention in VR, Alghamdi et al. (2017) conducted a study in which they found that virtual representations of typical everyday domestic stressors in a non-immersive VR environment can induce significant psychological and physiological reactions to stress. They stated that especially in an immersive VR environments and stimuli related to significant life changes or scenarios can create emotional reactions such as stress, anxiety, or fear. The same was mentioned by users (Meehan et al., 2003), they stated that some immersive VR environments or stimuli can cause emotional and psychological reactions. Walshe et al. (2005) mentioned that VR users can be emotionally affected by the virtual environment they are immersed in, even though they acknowledge that these environments are not real. However, not only emotions can be affected in VR, Yoon and Vargas (2014) conducted a study in which they revealed that the traits of avatars in virtual environments promoted and accentuated the individuals' behaviors aligned with the avatar, either pro or anti-social displays, depending on the pre-determined avatar traits

With the development of alternatives and improvements in the online shopping and emergence of technologies such as virtual reality, for this study, a model was proposed in which it is presented the possible relations between three main variables, cognitive flexibility, sense of power and intention to return and the moderating effects of personality traits and type of sensory experiences, all in an immersive virtual environment.

Figure 1- Proposed model



Source: Own elaboration

2.3. Cognitive Flexibility

As stated above, Virtual Reality has several limitations, one of the biggest ones is the lack of a tactic sense. In a VR experience, the user is not able to feel the real tactic emotions, at least not like in real life (Lombart et al ,2019). The same happens with the senses of taste or smell. The two senses that can be really experienced are sight and sound. In a way, in VR the user needs to adjust to the environment he/she's immersed in. The type of experience and easiness of adoption will be determined, along with other factors, by the individual's cognitive flexibility (Dennis and Vander Wal, 2010)

Cognitive flexibility is "the ability to switch cognitive sets to adapt to changing environmental stimuli" (Dennis and Vander Wal, 2010: 242 *cited in* Main, Penner and Bullard, 2019). It is characterized by the ability to adapt the way of thinking according to new facts and new circumstances in one's environment (Deak, 2003) and it supports diverse thinking and problem solving (Spiro, et al., 1988). It refers to the existence of options and alternatives, the capacity to be flexible and to adjust to any situation and to the self-efficacy in being (Martin and Rubin, 1995). Cognitive Flexibility can be facilitated by previous states and it can even be triggered experimentally. For example, (Nielsen, 2015) studied that reasonable levels of ambient noise promotes cognitive flexibility.

The implicit-theory framework developed by Carol, Dweck, Chi-yi (1995) distinguishes two groups based on different beliefs: incremental and entity theories. Entity-theorists believe in a predetermined disposition that cannot be changed whereas the Incremental-theorists believe in the possibility of change and improvement (Main, Pennerand and Bullard, 2019).

Entity-theorists believe that someone's ability, personality traits, and world-dispositions are factors that are beyond one's control (Main, Penner and Bullard, 2019; Chiu, Hong et al., 1997; Poon and Koehler, 2006). These theorists tend to blame someone's behavior on their personality traits (Main, Penner and Bullard, 2019; Chiu, Hong et al., 1997; Erdley and Dweck, 1993). Contrarily, Incremental-theorists believe that ability, personality traits, and world-dispositions are malleable factors and can change through effort (Main, Penner and Bullard, 2019; Chiu, Hong et al., 1997; Poon and Koehler, 2006). In sum, the center of implicit self-theory is the difference between those who believe in relatively fixed personality traits (entity theorists) and those who believe in more dynamic and flexible traits (incremental theorists) (McConnell, 2001).

Adopting an incremental-theory mindset develops cognitive flexibility (Main, Penner and Bullard, 2019) and by adopting this theory, one needs to be in constant adaptation and developing the new information, considering different approaches and outcomes based on that information. The Incremental theorists are the type of individuals who would be more adaptable and more easily immersed in a virtual environment.

2.4. Sense of Power

Power has been defined as an "asymmetric control over valued resources in social relations" (Rucker, Galinsky, and Dubois, 2012; Keltner, Gruenfeld, and Anderson, 2003; Thibaut and Kelley, 1959). Nevertheless, power is not merely the control over resources or composed just by an individual's social position. Power is likewise a psychological state—a perception of a person's capacity to influence others (Bugental, Blue, and Cruzcosa, 1989; Galinsky et al., 2003)

Feeling powerless is commonly an unpleasant state that drives consumers to attenuate this state. Moreover, some theories propose that that status is one source of power, and therefore feeling powerless might be compensated for by demonstrating or obtaining status (Rucker and Galinsky, 2008)

Social density has been stated as an important factor that affects one's sense of power. It was described by Eroglu and Machleit (1990) as a holistic perceptual evaluation build of how many people are present, how proximal people are from each other, and the overall spaciousness of the specific environment. Studies have demonstrated that increased social density tendency generates a decline on the perceived control over the social environment (Madzharov et al., 2015; Hui and Bateson, 1991; Machleit, Eroglu, and Mantel, 2000; Van Rompay et al., 2008). Meaning that social density alters the anticipated control consumers feel, or the level of social power that they experience (Rucker, Galinsky, and Dubois, 2012).

Research has established that scents can carry haptic-based associations, in which some scents are perceived to be warm (e.g., vanilla, cinnamon) and others are perceived to be cool (e.g., peppermint, eucalyptus) (Krishna, Elder, and Caldara, 2010). This way, and according to Madzharov et al. (2015) a warmer/cooler cool scent will impact the perception of social density and consequently one's sense of power. In a retailing environment, Lynn et al. (1993) detailed that the need for power is a desire to be able to influence others and that people with a high sense of power may find tipping customs mostly appealing, because tipping will be seen as an incentive and a reward that will give consumers power over the people who are serving them.

According to Rucker, Galinsky, and Dubois (2012) when people consider themselves has being low on power, they tend to place a higher value on products and in certain attributes that will help on their power restoration goal. As an example of this, in a study conducted by Rucker and Galinsky (2008) it was shown that people in a low power state give a lot more value to high status products than high performance ones. This is explained because when it comes to consumption, power-compensatory behaviour is highlight through a higher purchase behaviour, of status type of products. (Rucker and Galinsky, 2008; Rucker, Galinsky, and Dubois, 2012) however, this is not verified and had no effect on spending for objects unassociated with status (Magee and Galinsky, 2008). Opposed to this idea, Rucker, Dubois and Galinsky (2011) study provide support to the idea that consumer spending (whether it is for themselves or others) can be considerably affected by current psychological states of power. Furthermore, the authors affirm that high-power individuals, opposed to low-power ones, would have been willing to pay more for the low-status products.

Considering the studies described before regarding the virtual reality, in which there's proof that there's a tendency for people to physiologically respond to actions done to them in VR and also be affected psychologically, trough stress for example. This psychological impact on the user suggest that a VR experience should also affect an individual's sense of power. Furthermore, as mentioned cognitive flexibility is the ability to adjust the way of thinking according to the circumstances, we propose that cognitive flexibility will have a positive effect on one's sense of power, thus forming the following hypothesis:

H1: Cognitive Flexibility has a positive and significant effect to Sense of Power

2.5. Revisit Intentions

The Revisit intentions has also been evaluated as a perceived value (hedonic and utilitarian) (Santini, Ladeira and Sampaio, 2018). Consumer behavior studies have proved that product and service consumption aggregates two dimensions: utilitarian and hedonic (Babin, Darden, and Griffin, 1994).

The hedonic dimension states that consumers make choices which are guided by pleasure motivations, emotional factors, recreational consumption, and stimulation. In this dimension the consumer's actions can be guided by promises of reward (Babin, Darden, and Griffin, 1994). On the opposite side, utilitarian value is most related with rationality and efficiency (Batra and Ahtola, 1991). In this dimension, tourists, for example, often return to places they previously visited due to rational and tangible factors such as satisfaction with the cost, the time of travel, whether it is low or high season, factors that are related to financial motivations. (Santini, Ladeira and Sampaio, 2018). For the utilitarian dimension, virtual stores can be advantageous due to time saving aspects the convenience and money saving point of view, which allows customers to have access to the store directly from their place.

The foremost antecedents of revisit intentions identified in past studies have included: satisfaction (Jang and Feng, 2007); motivation (Lee, Lee, and Lee, 2014); perceived value (Petrick, Morais, and Norman, 2001); destination image (Chew and Jahari, 2014); perceived risk (Çetinsöz and Ege, 2013; Chew and Jahari, 2014); attachment (Petrick, 2004) and previous travel experience (Huang and Hsu, 2009 *cited in* Li, Wen and Ying, 2018)

Seiders et al. (2005) studied that customer satisfaction has a remarkable positive effect on repurchase intention, however, they found no direct effect on the actual behavior (repurchase behavior). Luo and Homburg (2007) disagree and supported that satisfaction influences future purchase intentions and also behaviors and increases customer loyalty. Customer loyalty was described by Wai (2019) as the intention to speak positively about a certain service/place, to re-commend it, and to return to that place in the future. Additionally, Kuenzel &Yassim, (2007: 44) defined it as *"a deeply held commitment to re-buy or re-patronize a preferred product or service consistently in the future, despite situational influences and marketing efforts having the potential to cause switching behavior."*

As previously mentioned in the literature, status is considered to be one source of power. As studied by Rucker and Galinsky (2008), the psychological states of power have been proven to have critical consequences on people's behavior. Furthermore, according to the literature, consumers have a tendency to attenuate the feeling of powerlessness by demonstrating or obtaining status, which can be done through a power-compensatory behavior, for example, through a high purchase behavior. Purchasing more, more expensive and status products. Also, Rucker, Dubois and Galinsky (2011) study added that the consumer spending (whether it is for themselves or others) can be considerably affected by current psychological states of power, and not only for status products, the authors affirm that high-power individuals, opposed to low-power ones, would have been willing to pay more for the low-status products. This idea lead to the suggestion of the following hypothesis that sense of power will positively impact the individual's intention to revisit.

H2: Sense of Power has a positive and significant impact on intention to revisit.

2.6. Sensory Experience – Psychological distance

In a virtual environment one of the biggest limitations mentioned are the senses and the inability to experience some of the senses. But the senses are a very important factor on a shopping experience, weather in traditional or a virtual environment.

Studies show that consumer experience can be positively enhanced by tangible and intangible cues that stimulate consumers' five senses through managing atmospheric elements of an operation (Suh, M. et al., 2015). Furthermore, businesses try to impact the consumers by

creating and enhancing the physical environments with the goal to appeal to the consumer's five senses and create an appropriate environment that meets their marketing objectives (Walls, Okumus, Wang, and Kwun, 2011) *cited in* (Helmefalk and Hultén, 2017)

Embodied VR devices, used in the tourism filled, are in straight contact with the individual's senses and work as a mediator for potential customers' experiences inside a virtual environment, allowing the ability to virtually discover, and choose specific destinations more confidently on where they want to travel (Flavián, Ibáñez-Sánchez and Orús, 2019).
Feng, Dey and Lindeman (2016) stated that multi-sensory feedback has been proven to increase the levels of immersion in a virtual environments and also provide similar cues and feelings to what the person would feel in the real worlds, such as visual, auditory and haptic cues.

Even though it is the standard senses used in this type of devices, a person's sense of immersion in VR is significantly improved when more senses other than sight and sound are included. Tactile sensation, for example, is a fundamental part of each person's interaction with the world, and both haptic and also thermal senses play a role in this perception. (Kleinsman-Leusink-Hill, Bronlund and Gupta, 2018)

Elder et al (2017) studied that when it comes to the five senses, some direct experiences can be considered as more proximal than others, An individual can experience each of the senses directly, however, each of its spatial distance will vary according to the physical distance required for the sense to be perceptive (Rodaway, 2002). This means that something will only be tasted if it is inside someone's mouth or touched and felt if it is near enough for contact. Therefore, the senses of touch and taste are considered by Trope and Liberman (2010) as more proximal sensory experience. The opposite happens for what is mentioned as distal sensory experiences, referring to the senses of sight and hearing in which a stimulus might be further apart and still be sensed.

Trope and Liberman (2010) go further in their studies and remark that sensory imagery follows a similar pattern as an actual experience. They explain that an imagined experience that is based on senses that need to be physically closer in order to be sensed (taste, touch) will feel as though they are physically closer than for example a person that imagined a

sensory experience with a sense that can be felt further away (hearing and sight). Their studies explain not only the distinction between psychologically proximal or distal sensory images, but also that this will influence the judgments of psychological distance on other dimensions such as spatial and temporal distances.

The option for the two sensorial type of experiences was based on the aforementioned authors' discovery on proximal and distal senses. For the study, it is assumed that as it happens in imagined sensory experiences, the same is assumed for VR. Therefore, we hypothesize that each sensory experience will have a different effect in the model and will moderate the relation between sense of power and behavior.

H3: The sensorial experience type will have a moderating effect on the relationship between sense of power and behavior

2.7. Personality Traits

According to the authors Lord et al., (1986), Megargee, (1969) and Moskowitz, (1988, 1990) specific personality traits can benefit individuals to obtain higher levels of influence and control in their relationships, contributing to each personal sense of power, for example, people who are assertive, forceful, and self-assured ways (Buss and Craik, 1980). The same applies to other traits, individuals who are more dominant should have a greater ability to influence others than those who are more introverted, timid, or submissive

The majority of researchers agrees on the existence of five factors of personality that explain personality attributes (Digman, 1990). There are several names used to describe each of the five, however the following have been used by several different authors:

- The first dimension was first introduced by Eysenck (1947) and is Extraversion/Introversion. This trait can often describe an individual who is sociable, gregarious, assertive, talkative, and active. (Barrick and Mount, 1991).
- The second dimension is commonly named Emotional Stability, Stability, Emotionality, or Neuroticism (Borgatta, 1964; Conley, 1985; Hakel, 1974; John, 1989; Lorr & Manning, 1978; McCrae & Costa, 1985; Noller et al., 1987; Norman, 1963; Smith, 1967 *cited in* Barrick and Mount, 1991). The traits associated with

Neuroticism are being depressed, anxious, embarrassed, angry, insecure, worried and emotional (Barrick and Mount, 1991).

- Agreeableness or Likability is the third dimension of the five factors of personality. This dimension is associated traits such as being courteous, flexible, trusting, good-natured, cooperative, forgiving, soft-hearted, and tolerant. (Barrick and Mount, 1991)
- The fourth dimension is Conscientiousness or Conscience Conscientiousness and it is related to dependability, being thorough, organizational skills and responsible.
- Finally, the fifth and final dimension is, what McCrae & Costa (1985) called Openness to Experience. This includes traits such as strong imagination, curious, authentic, artistic and smart.

When explained the concept of cognitive flexibility, it was mentioned that entity-theorists believe that someone's ability, personality traits, and world-dispositions are factors that are beyond one's control, incremental theorists, on the other hand, defended that those are malleable factors and can change through effort. Focusing on this last point of view, by adopting an incremental-theory mindset an individual develops cognitive flexibility.

Also as previously stated, incremental theorists defend that aspects such as personality traits are malleable factors that can be changed through the willingness of individuals. These traits vary from higher or lower openness to experience, neuroticism, consciousness, agreeableness and extroversion. Thee variations define not only a person's personality, but they will have impact on their sense of power, for example. An individual that scores higher in consciousness, is likely to have a greater sense of power than one low in consciousness.

With this being said and basing on and incremental theory beliefs, the following hypothesis is formed:

H4: Personality Traits will moderate the relationship between Cognitive Flexibility and Sense of Power.

3. Methodology

3.1. Research Approach

In this VR experience, it is suggested that in the virtual environment, sense of power is affected by cognitive flexibility. Such cognitive flexibility is expected to have an effect on the intention to return through the moderating role of Personality Traits and on the Sensorial Experience.

Learning more about the moderating effect of Sensorial Experience is one of the main goals of the present study, through the presence of sight and sound in one of the versions of the experiment and the senses of sight, sound and scent on the other experience, and to see the effect it has on the relationships between the constructs shown in figure 1.

To back up the proposed theoretical framework the methodology applied a virtual reality experience. An environment in a Café was created using the Unity program. The process under which this environment was developed will be explained further in this chapter. The necessary data was collected in the end of the experiment through a questionnaire.

3.2. Research Design

As aforementioned two experiences were conducted. The difference in the experiences regards type of sensorial experience, using Elder et al. (2017) imagined senses that require close proximity to the body in order to be sensed (i.e., taste, touch) will feel more psychologically proximal than senses that do not require such close proximity (i.e., hearing, sight). Likewise, in the conducted experiences, there was a division into two types of sensory experience: A proximal one, with the presence of Sight and sound and a distal experience, with the presence of the senses of sight, sound and smell.

For the experiments, despite being in separate groups, the VR environment of the experience was the same. A virtual café, with silent avatars inserted, with the only purpose of making it a more realistic experience. There was low background music playing, to set an environment. The person would sit in a chair, insert the VR Goggles and it would find him/herself sitting in a café table.

In one condition, there was only the presence of vision and hearing. On the second condition an ambient scent of coffee was inserted, adding to the existing senses of vision and hearing, ideally representing a proximal relation to the experience. The two conditions were shown to different groups of people.

The participants were faced with a single set of data, as a final questionnaire. This task allowed the gathering of all the needed data to the study. Through a set of questions, it was evaluated: Participant's sense of power (Anderson, John, and Keltner, 2011); an evaluation of their cognitive flexibility (Martin and Rubin, 1995); an analysis of their personality traits (Guido et al., 2015); and their psychological distance from the café (Elder et al., 2017). This final question was the only that differed from one study to the other. In one, it appealed to the sense of vision only, on the other it appealed to the sense of scent. In this stage, it was also important to inquire participants about their return intention (DiPietro and Levitt, 2019). In the beginning of the question asking the average of coffees the person drank a day. This was created to detect the person's opinion towards coffee, weather they like it or not.

3.3. Procedure

A pre-test both for the VR experience, as well as the questionnaire, in the week before the experience took place. This pre-test was made to 5 people and aimed to detect any visual or technical problems in the VR environment and any mistyped or lack of clarity in the questionnaire.

The experiment took place in the last two weeks on June 2019th. The first week took place in a facility of a coffee shop on Lisbon and in the second week in ISCTE. Subjects who participated were first briefed about what to expect and that they would be immersed in a VR environment in Café and that the experience was merely observation of the surroundings.
Then, the subjects were briefed to be seated. Once the program was ready, they put the glasses on, they look around, and if they wished then could stand up and observe from standing position. They would observe the coffee in the table, the avatars that were in the café, they would listen to the background music. Once they felt like they observed everything and felt immersed in the experience, they would then remove the glasses. In the end, a final questionnaire was handed in digital form to the participants in which all the date necessary for the study was collected. The questionnaire took about 5 minutes to be filled.

3.4. Measures

The questionnaire began with the question regarding the average of coffees the participant drank a day. The general demographic data was collected in the end of the questionnaire. There were several questions regarding the chosen measures of the investigated variables, which are explained below.

1. Sense of Power. Aiming to measure one's perception of power, the questions were retrieved from the study by Anderson, and Keltner (2012). It contained questions such as "I can get other to listen to what I say"; "My ideas and opinions are often ignored" or "I think I have a great deal of power". The questions remain the same as the original study only translated to Portuguese. Participants responded to each of the seven questions using seven-point Likert scales (1 = "Totally Disagree"; 7 = "Totally Agree").

2. *Cognitive Flexibility*. Created by Martin and Rubin (1995) the 12-item 6-point scale in Likert format scale was constructed to measure Cognitive Flexibility. For the purpose of the study, all the 12 items were used. The responses were measure in 1= strongly agree; 6= strongly disagree. For the purposes of the result analysis, the scale was reverted. Some examples of the type of questions presented are "I avoid new and unusual situations", "My behavior is a result of conscious decisions that I make" or "I am willing to work at creative solutions to problems".

3. *Personality Traits*. For this study, the scale was based on The Italian version of the 10-item Big Five Inventory by Guido, Pelus, Capestro and Miglietta (2012). The original scale it was based on was created by Rammstedt and John (2007), this BFI-10 appears to be a better alternative to Gosling, Rentfrow, and Swann's (2003) TIPI scale, as it was found by its authors to be psychometrically superior to the latter. Participants responded to each of the 10 items using a five-point Likert scales (1 = "Disagree Strongly"; 5 = "Agree strongly"). The section began with "I see myself as someone who…" after which the respondents had evaluate, according to the Likert scale, statements such as "is generally trusting", "as few artistic interests" or "is reserved".

4. *Psychological Distance.* Retrieved from the study by Elder et.al (2017). This is the question that differentiates the two conditions of the experience. In this section participants were told to imagine the coffee cup that was in the experience they have just made, and to focus on only one sense. On one condition, they were told to focus on the sense of "Vision". On the other condition, they were told to focus on the sense of "Scent". They were told to

image a sensory experience in which they interact with that coffee. They are seeing/smelling it (according to the condition). Then the participants are presented with a modified IOS scale (Aron, Aron, and Smollan 1992) with two circles, one representing themselves, and the other representing the chosen object that the participants imagined interacting with. The circles varied in the distance between them, with 1 representing the least overlap (i.e., the greatest distance between themselves and the object), and 9 representing a complete overlap (i.e., minimal distance). Participants were told to select which of the nine pictures of circles best represented their relationship with the object given the imagined sensory experience.

5. *Return Intentions*. This section was based on DiPietro and Levitt' (2019) study on Restaurant Authenticity. It contained three items and was adapted from Jang et al. (2011). The insertion of the variable intention to return was inserted in the model to measure the individual's behavior as a response of the variables in the model. For the current study's survey, a 7-point Likert-type scale was utilized (1 = strongly disagree and 7 = strongly agree). The items included in the section were adapted for this study only by the replacement of the word "restaurant" to "cafe". The three questions were "I will recommend this cafe to others", "I will speak positively of this cafe" and "I plan to make repeat purchases at this cafe".

3.5. Participants

There were 125 participants in the study. For procedural design, the post experience questionnaire was developed in consultation with senior academics ensuring the questions to be clear, concise, and specific. In the end of the questionnaire, a section containing personal demographic questions was inserted, related to the participant's age, gender, and level of education.

Relatively to the sample population characteristics, a summary of the sample demographics is presented in table 1. As a brief reading on the sample profile, it can be reported that from the total population that participated in the experience there were 78 females and 47 males. As most of the participants were between the ages of 21-25 years old, 40% of the whole sample held a bachelor's degree, followed by 32.8% with the secondary studies.

The distribution of the moderator sensorial experience type had two conditions, sight and sound; and sight, sound and scent and it can be found on table 2. There were 63 participants in the sight and sound condition and 62 participants in the sight, sound and scent.

Table 1- Total Demographics

Demographic Characteristics	Frequency	Percentage (%)
Age		
18-20	30	24
21-25	58	46.4
26-30	15	12
31-35	12	9.6
36-40	5	4
41-45	1	0.8
46-50	1	0.8
+50	3	2.4
Gender		
Female	78	62.4
Male	47	37.6
Education Level		
Primary (9th grade)	3	2.4
Secondary (12th grade)	41	32.8
Bachelor's degree	50	40
Master / Post-graduate/PhD	31	24.8

Table 2- Demographics by sensory experience

	Sight + sound + smell	Sigh + sound
Demographic Characteristics	Frequency	
Age		
18-20	12	18
21-25	25	33
26-30	9	6
31-35	8	4
36-40	5	
41-45	1	
46-50	1	
+50	1	2
Gender		
Female	39	39
Male	23	24
Education Level		
Primary (9th grade)	1	2
Secondary (12th grde)	31	10
Bachelor's degree	24	26
Master / Post-graduate/Phd	6	25
TOTAL	62	63

Source: Own elaboration

4. Results

4.1. Descriptive Analysis

In this section there are present the results of the descriptive analyses that was performed through the SPSS program. Data such as the mean, standard deviation and the Cronbach's Alpha of each dimension of the conceptual model is detailed.

4.2. Average of Coffees

The first question of the questionnaire is was inserted as a control variable. To determine whether people liked coffee.

An independent T-test was conducted to determine if there were any variances in the means of the difference sensory experiences determined by this variable. By looking at table 3, it can be determined that there are no significant variances between the group means of sensory experience (sig. 0.539 > 0.05). Adding to this, the group means of each sensory experience are not statistically significantly different from one another (Sig. (2-tailed) > 0.05.)

This study found that the average of coffee in sigh, sound and smell sensory experience had statistically significantly higher average of coffees (2.02) compared sigh and sound sensory experience (1.5), **t (123) =2.281, *p*=0.024.**

Table 3- Independent Samples Test - Average of coffees

Independent Samples Test

			Average of Coffees	
			Equal Variances Assumed	Equal Variances not assumed
Levene's Test for Equality of Variances	F		0.380	
	Sig.		0.539	
t-test for Equality of Means	t		2.281	2.280
	df		123	122.361
	Sig. (2-tailed)		0.024	0.024
	Mean Difference		0.516	0.51626
	Std Error Difference		0.226	0.226
	95% Confidence Interval of the Distance	Lower	0.068	0.068
		Upper	0.964	0.965

Source: Own elaboration

Table 4 - means of average of coffees

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Average of Coffees

Sensory Experience	Average
Sight + Sound + Smell	2.024
Sight + Sound	1.508
Total	1.764

Source: Own elaboration

4.3. Sense of Power

The analyses of sense of power was conducted to measure each person's perception of their own sense power. Firstly, an independent T-test was conducted to determine if there were significant differences between the two groups of sensory experiences regarding the variable sense of power.

Table 5- Independent Samples Test - sense of power

Independent Samples Test

			Sense of Power	
			Equal Variances Assumed	Equal Variances not assumed
Levene's Test for Equality of Variances	F		2.953	
	Sig.		0.088	
t-test for Equality of Means	t		0.851	0.850
	df		123	119.059
	Sig. (2-tailed)		0.397	0.397
	Mean Difference		0.125	0.125
	Std Error Difference		0.147	0.147
	95% Confidence Interval of the Distance	Lower	-0.166	-0.167
		Upper	0.417	0.418

Source: Own elaboration

By looking at table 5 it can be can determined that there is no significant difference in variance between the two sensory experiences Sight + Sound and Sight + Smell + Sound (Sig. 0.088 > 0.05). As results, the group means of each sensory experience are not statistically significantly different from one another Sig. (2-tailed) > 0.05. Thus **t (123) = 0.851, *p*=0.397.**

This group is constituted by seven questions. The means, standard deviation and the Cronbach's Alpha can be found on table 6.

The highest number of mean regards question 7 of Vision + Smell experience with 5.419. The smallest mean is in question 5 of the same experience, with a mean of 4.129.
Looking in global terms, the higher and lowest means of the total are found in questions 5 and 7 respectively, which is in accordance with the stated before. By looking at the standard deviation one can tell that question 5 has the highest number (1.443) representing the item with the highest response variability.

Table 6 - Means, standard deviation and Cronbach's Alpha - sense of power

In my relationships with others . . .	Sensory Experience					
	Sight + Sound + Smell		Sight + Sound		TOTAL	
	Mean	Std. Deviation	Mean	Std. Deviation	Mean	Std. Deviation
1. I can get him/her/them to listen to what I say.	5.274	1.148	5.079	1.021	5.176	1.086
2. My wishes do not carry much weight.	5.145	1.389	5.317	1.189	5.232	1.290
3. I can get him/her/them to do what I want.	4.952	1.260	4.476	0.965	4.712	1.142
4. Even if I voice them. my views have little sway.	5.290	1.497	5.159	1.208	5.224	1.355
5. I think I have a great deal of power.	4.129	1.624	4.175	1.251	4.152	1.443
6. My ideas and opinions are often ignored.	5.177	1.349	5.143	1.342	5.160	1.340
7. Even when I try. I am not able to get my way.	5.419	1.080	5.159	1.110	5.288	1.099
Cronbach's Alpha	0.786		0.771		0.779	

Source: Own elaboration

4.4. Cognitive Flexibility

The second dimension evaluated is Cognitive Flexibility. It was evaluated in twelve questions. The data, (means, standard deviation and the Cronbach's Alpha) can be found on table 7.

To determine if there were significant differences between the two groups of sensory experiences regarding the Cognitive Flexibility, an independent T-test was conducted (table 8). Firstly, after conducting an Independent t-test, it was determined that there are no significant differences between the two sensory experiences Sight + Sound and Sight + Smell + Sound regarding the variable Cognitive Flexibility (Sig. 0.258 > 0.05). As result, the group means of each sensory experience are not statistically significantly different from one another Sig. (2-tailed) > 0.05. Thus **t (123) = -0.249, *p*=0.803**

Table 7- Means, standard deviation and Cronbach's Alpha - cognitive flexibility

Based on how you feel at this moment, to what extent would you say you agree or disagree with the following statements	Sensory Experience					
	Sight + Sound + Smell		Sight + Sound		TOTAL	
	Mean	Std. Deviation	Mean	Std. Deviation	Mean	Std. Deviation
1. I can communicate an idea in many different ways	4.581	1.300	4.556	0.876	4.568	1.102
2. I avoid new and unusual situations (Reversed)	4.629	1.204	4.540	1.255	4.584	1.226
3. I feel like I never get to make decisions (Reversed)	4.806	1.265	4.683	1.013	4.744	1.142
4. I can find workable solutions to seemingly unsolvable problems	4.226	1.234	4.016	0.992	4.120	1.119
5. I seldom have choices when deciding how to behave (Reversed)	3.823	1.300	4.175	1.115	4.000	1.218
6. I am willing to work at creative solutions to problems	4.290	1.260	4.492	1.030	4.392	1.149
7. In any given situation. I am able to act appropriately	4.806	1.377	4.952	0.851	4.880	1.140
8. My behavior is a result of conscious decisions that I make	4.484	1.364	4.619	0.906	4.552	1.153
9. I have many possible ways of behaving in any given situation	4.210	1.404	4.508	1.045	4.360	1.240
10. I have difficulty using my knowledge on a given topic in real-life situations (Reversed)	4.177	1.432	3.921	1.209	4.048	1.325
11. I am willing to listen and consider alternatives for handling a problem	4.935	1.084	5.032	0.915	4.984	1.000
12. I have the self-confidence necessary to try different ways of behaving	4.274	1.393	4.095	1.174	4.184	1.285
Cronbach's Alpha	0.806		0.754		0.785	

Source: Own elaboration

Table 8 - Independent Samples Test - cognitive flexibility

Independent Samples Test

			Cognitive Flexibility	
			Equal Variances Assumed	Equal Variances not assumed
Levene's Test for Equality of Variances	F		1.333	
	Sig.		0.250	
t-test for Equality of Means	t		-0.249	-0.249
	df		123	111.783
	Sig. (2-tailed)		0.803	0.804
	Mean Difference		-0.02878	-0.028
	Std Error Difference		0.115	0.115
	95% Confidence Interval of the Distance	Lower	-0.257	-0.257
		Upper	0.199	0.200

Source: Own elaboration

By looking at the total, which represents the results from both Sight + Sound and Sight + Smell + Sound experiences, (table 8) the highest mean corresponds to question 11 with an average very close to 5 (4.984). For both experiences individually, this is the question with the highest mean as well. Oppositely, the question with the lowest mean global wise is question number 5. The question with the higher response variability is question 10, with a std. Deviation of 1.325

4.5. Personality Traits

In this group of questions, the aim was to evaluate the personality traits of each individual. It was constituted by 10 questions, two for each psychological trait. Table 10 shows each question as well as the descriptive analysis for each question.

Once again, in order to determine if there were significant differences between the two groups of sensory experiences regarding Personality Traits, an independent T-test was conducted (table 9). By looking at Sig. 0.563 > 0.05, it can be determined that there are no significant differences between the two sensory experiences regarding the variable Personality Traits. Secondly, by observing the sig. (2-tailed) results, the group means of each sensory experience are not statistically significantly different from one another Sig. (2-tailed) > 0.05. Therefore, **t (123) = -0.994, *p*=0.322**

Table 9 - Independent Samples Test - personality traits

Independent Samples Test				
			Personality Traits	
			Equal Variances Assumed	Equal Variances not assumed
Levene's Test for Equality of Variances	F		0.337	
	Sig.		0.563	
t-test for Equality of Means	t		-0.994	-0.993
	df		123	122.607
	Sig. (2-tailed)		0.322	0.323
	Mean Difference		-0.077	-0.077
	Std Error Difference		0.078	0.078
	95% Confidence Interval of the Distance	Lower	-0.232	-0.232
		Upper	0.077	0.077

Source: Own elaboration

Since it is a personality analysis the Std. Deviation is an interesting number to evaluate, representing the question, personality item, in which there was variability in the responses, more differences of personality. By looking at the total, the question with higher deviation is 1.308, regarding question 5, not a significant variation. The question with the lowest result is question 10, with a Std. Deviation of 0.905.

Looking at the means, the question with higher mean is question 10 with an average of 3.896. Individually, in each experience, question 10 was also the one with higher mean. On the opposite side, the query with lowest mean is question number 9, again, in the total of the responses and in each experience individually.

On table 10, Cronbach's alpha was not calculated for this variable because as stated previously, each dimension of the five personality traits is constituted by 2 items (total of 10 items, two items for each personality trait), therefore it is not possible to calculate the Cronbach's alpha for only two items.

Table 10 - Means, standard deviation and Cronbach's Alpha - personality traits

I see myself as someone who...	Sensory Experience					
	Sight + Sound + Smell		Sight + Sound		TOTAL	
	Mean	Std. Deviation	Mean	Std. Deviation	Mean	Std. Deviation
1. is reserved	3.242	1.263	3.127	1.225	3.184	1.240
2. is generally trusting	3.629	1.028	3.667	1.032	3.648	1.026
3. Tends to be lazy	2.774	1.260	2.984	1.143	2.880	1.202
4. Is relaxed. handles stress well	3.177	1.287	3.111	1.233	3.144	1.255
5. Has few artistic interests	3.177	1.373	3.286	1.250	3.232	1.308
6. Is outgoing. sociable	3.726	1.104	3.635	0.972	3.680	1.036
7. Tends to find fault with others	3.258	1.144	3.540	1.090	3.400	1.122
8. Does a thorough job	3.581	1.235	3.603	1.040	3.592	1.137
9. Gets nervous easily	2.774	1.165	2.921	1.261	2.848	1.212
10. Has an active imagination	3.774	0.913	4.016	0.889	3.896	0.905

Source: Own elaboration

4.6. Psychological Distance

The variable evaluated in this question is Psychological Distance. It was to measure the differences in the Psychological distance that the two sensory experiences were created. To evaluate the psychological distance, according to the senses, there were two sensory experiences conducted. Therefore, this is the only question that differed in the entire questionnaire

In the Experience with Sight + Sound the question for Psychological Distance addressed the sense of Vision. In the Sight + Sound + Smell experience, the question addressed the sense of smell. It had only one question asking the respondents to choose one of 9 images that best represented their imagined experience. The results can be found in Table 12.

Looking at table 11 results show that there were significant differences between the two groups of sensory experiences regarding Psychological Distance (Sig 0.002 < 0.05)

To determine if the group means of each sensory experience are not statistically significantly different from one another the results of sig. (2-tailed) results show that the group means of each sensory experience are in fact statistically significantly different from one another (Sig. (2-tailed) 0.043 > 0.05).

This study found that regarding psychological distance, sight, sound and smell sensory experience, was statistically significantly higher (4.05) compared to after a sensory experience with sight and sound (3.45), ***t* (123) = -2.046, *p*=0.044.**

Table 11- Independent Samples Test - psychological distance

Independent Samples Test				
			Psychological Distance	
			Equal Variances Assumed	Equal Variances not assumed
Levene's Test for Equality of Variances	F		9.590	
	Sig.		0.002	
t-test for Equality of Means	t		-2.046	-2.041
	df		123	113.930
	Sig. (2-tailed)		0.043	0.044
	Mean Difference		-0.596	-0.596
	Std Error Difference		0.291	0.291
	95% Confidence Interval of the Distance	Lower	-1.172	-1.174
		Upper	-0.019	-0.017

Source: Own elaboration

On table 12 one can see that in Sight + sound + Smell the mean is 4.048. significantly higher than in Sight + Sound (mean is 3.452). Regarding the standard deviation, Sight + Sound has a higher variance in responses with 1.835 against 1.296 of Sight + Sound + Smell. In global terms, the mean of the question was 3.752 and the standard deviation 1.649.

Table 12 - Means and Standard Deviation - psychological distance

Psychological Distance	Sensory Experience					
	Sight + Sound + Smell		Sight + Sound		Total	
Choose one of the nine pictures of circles that best represented the relationship with the object given the imagined sensory experience	Mean	Std. Deviation	Mean	Std. Deviation	Mean	Std. Deviation
	4.048	1.396	3.452	1.835	3.752	1.649

Source: Own elaboration

4.7. Intention to Return

This dimension aims to study the behavioral part, specifically the intention to return. It is formed by three questions and the corresponding descriptive statistics are represented in Table 14. To determine if there is significance in the differences between the two groups of sensory experiences regarding this variable, an Independent t-test was conducted (see table 13). By looking at the value of Sig 0.661 one can determine that there are no significant differences between the two sensory experiences.

As results, the group means of each sensory experience are not statistically significantly different from one another Sig. (2-tailed) > 0.05. So, ***t* (123) = 1.418, *p*=0.15**

Table 13 - Independent Samples Test - intention to return

			Intention to Return	
			Equal Variances Assumed	Equal Variances not assumed
Levene's Test for Equality of Variances	F		0.193	
	Sig.		0.661	
t-test for Equality of Means	t		1.418	1.418
	df		123	122.259
	Sig. (2-tailed)		0.159	0.159
	Mean Difference		0.326	0.326
	Std Error Difference		0.230	0.23025
	95% Confidence Interval of the Distance	Lower	-0.129	-0.129
		Upper	0.781	0.782

Source: Own elaboration

Table 14 - Means, standard deviation and Cronbach's Alpha - Intention to return

Return Intentions	Sensory Experience					
	Sight + Sound + Smell		Sight + Sound		TOTAL	
	Mean	Std. Deviation	Mean	Std. Deviation	Mean	Std. Deviation
1- I will recommend this restaurant to others.	5.161	1.333	4.841	1.273	5.000	1.308
2 - I will speak positively of this restaurant	5.226	1.348	4.825	1.339	5.024	1.353
3 - I plan to make repeat purchases at this restaurant	5.306	1.478	5.048	1.373	5.176	1.426
Cronbach's Alpha		0.952		0.932		0.943

Source: Own elaboration

Observing Table 14 results show that the mean of the third question is the highest value, in both experiences and in total. The lowest mean of the Total is in question 1, the same happening for experience Smell + Vision (mean 5.161) and for the Vision experience, the lowest mean is question two, with an average of 4.825.

Considering the Standard Deviation, the question with more variances is question 1. It happens in both experiences and in the total, with a Std. Deviation of 1.308 in Total. Explaining that question 1 is the one with more variances in responses.

5. Linear Regressions

Performing a Linear Regression analysis helps to understand if each variable affects another variable and in what form. The results are presented showing the differences in sensory experiences. Showing the total, with both sensory experiences combined, and then Sight and Sound and Sight, Sound and Smell separately.

5.1. Multiple Regression with Sense of Power as Dependent Variable and Cognitive Flexibility as Independent Variable

Table 15 - Multiple regression with sense of power as dependent variable and cognitive flexibility as independent variable

Sensory Experience		B	Std. Error	ß	t	Sig	R^2	adj.R^2
Sight + Sound + Smell	(Constant)	3.752	0.682		5.504	0.000		0.043
	Cognitive Flexibility	0.294	0.152	0.243	1.938	0.057	0.059	0.043
Sight + Sound	(Constant)	2.033	0.713		2.853	0.006		
	Cognitive Flexibility	0.649	0.158	0.464	4.094	0.000	0.216	0.203
Total	(Constant)	3.137	0.492		6.377	0.000		
	Cognitive Flexibility	0.417	0.109	0.325	3.809	0.000	0.105	0.098

Source: Own elaboration

A multiple regression was run to predict Sense of Power from Cognitive Flexibility (see table 15). Testing the total of the data (with both sensory experiences) it can be determined by looking at the ANOVA test table, the multiple regression model is valid as it has a significant value (0.000 < 0.05). Therefore, the variable Cognitive Flexibility is useful for to explanation Sense of Power.

By looking at the adjusted R squared results show that the variable Cognitive Flexibility explains almost 10% (9.8%) of the Sense of Power.

When looking at the results from the two sensory experiences separately, it can be determined that in both cases, individually, Cognitive flexibility is significant when explaining sense of

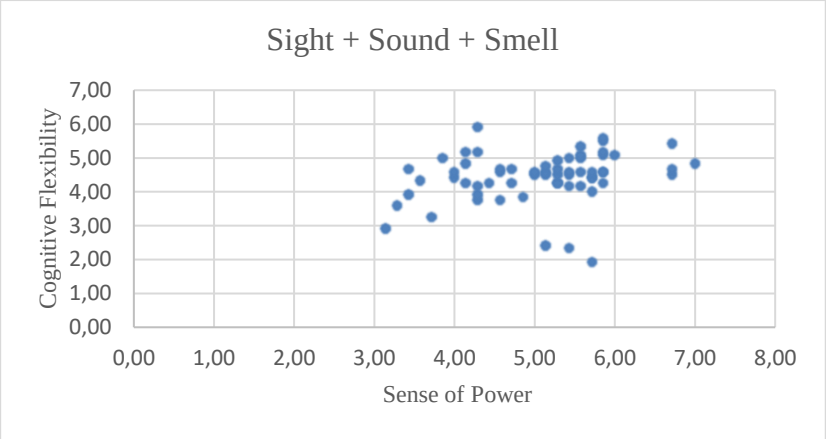
power (Sig<0.05), even though in the sensory experience with Sight, Sound and Smell the value is barely significant.

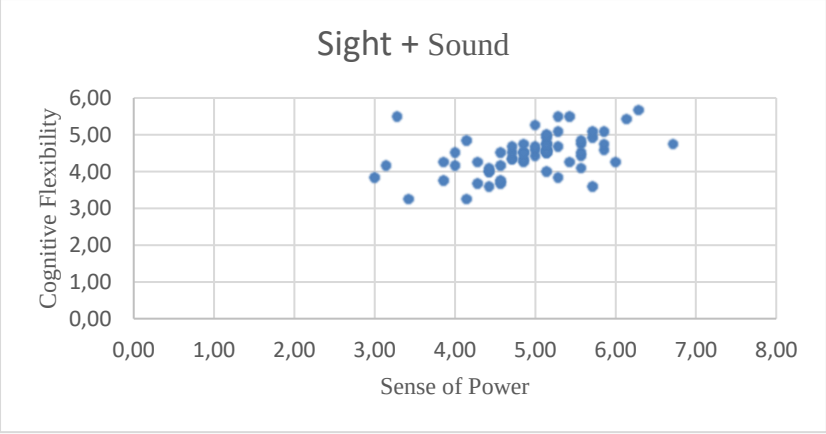
By comparing the Adjusted R squared, it can be stated that in the sensory experience with Sight + Sound cognitive flexibility explains much higher (20%) that in the sensory experience with Sight + Smell + Sound (4%).

In total, the results show that Cognitive Flexibility significantly predicts Sense of Power, **F (1, 123) = 14,506, p < 0.05, R^2 = 0.105.**

Therefore, the H1: Cognitive Flexibility has a positive and significant effect on Sense of Power is supported.

Graphs 1 and 2, represent the Liner Regression of Cognitive Flexibility and Sense of Power in each sensory experience





5.2. Multiple Regression with Intention to Return as Dependent Variable and Sense of Power as Independent Variable

Table 16 - Multiple Regression Analysis with of Intention to Return as Dependent Variable and Sense of Power as Independent Variable

Sensory Experience		B	Std. Error	ß	t	Sig	R^2	adj.R^2
Sight + Sound + Smell	(Constant)	6,465	0.972		6.653	0.000		
	Cognitive Flexibility	-0.244	0.189	-0.164	-1.289	0.202	0.027	0.011
Sight + Sound	(Constant)	4.671	1.055		4.429	0.000		
	Cognitive Flexibility	0.047	0.212	0.029	0.224	0.823	0.001	-0.016
Total	(Constant)	5.593	0.713		7.843	0.000		
	Cognitive Flexibility	-0.105	0.141	-0.748	-0.748	0.456	0.005	-0.004

Source: Own elaboration

Looking at the ANOVA test table, at the significant value (0.823 > 0.05), results show that the multiple regression model is not valid. The variable Sense of Power is not useful in explaining Intention to Return. H2: Sense of power positively and significantly impacts intention to return is not supported.

6. Moderation Analysis

Moderation occurs when the relationship between a dependent variable and an independent variable depends on a third variable. This third variable is named moderator. A moderator variable is a variable that alters the strength of the relationship between the two variables.

For this study, as mentioned in the hypothesis, the moderators that are tested are personality traits and sensorial experience.

6.1. Personality traits as a moderator on the relationship between Cognitive Flexibility and Sense of Power

As stated in the theoretical part of this thesis, the scale for Personality Traits was based on the study conducted by Guido, Pelus, Capestro and Miglietta (2012). In the study there are 10 items that are used to study the personality (table 10).
A multi-regression analysis was conducted to determine the moderating effect that Personality Traits has on the relationship between Sense of Power and Cognitive Flexibility.

The change in R^2 is 3.8% which is represents the percentage increase in the variation explained by the addition of the interaction term. It can also be stated that this increase is statistically significant ($p < .0005$), a result we obtain from the "Sig. F Change" column. We can conclude that personality traits do moderate the relationship between sense of power and cognitive flexibility

Sense of power = 2.826 + (0.356 x cognitive flexibility) + (0.181 x personality traits) + (-0.134 x CFxPT)

H4: Personality Traits will moderate the relationship between Cognitive Flexibility and Sense of Power is supported.

Table 17 – Moderation analysis total results – Sense of power as dependent variable and personality traits and cognitive flexibility as predictors.

									Change statistics	
		B	Std. Error	ß	t	Sig	R^2	adj. R^2	R^2 change	Sig. F Change
1	(Constant)	2.703	0.640		4.223	0.000	0.114	0.099	0.114	0.001
	Cognitive Flexibility	0.379	0.115	0.296	3.301	0.001				
	Personality Traits	0.180	0.169	0.095	1.062	0.291				
2	(Constant)	**2.826**	0.631		4.479	0.000	0.152	0.13	0.038	0.022
	Cognitive Flexibility	**0.356**	0.113	0.278	3.143	0.002				
	Personality Traits	**0.181**	0.166	0.096	1.088	0.279				
	CF_x_PT	**-0.134**	0.058	-0.195	-2.323	0.022				

Source: Own elaboration

a. Dependent Variable: Sense of Power
b. Predictors: (Constant). Personality Traits, Cognitive Flexibility

To determine if there was any variance in the moderation of Personality Traits according to the sensory experience, there was a comparison analyses between the sensory experiences Sigh + Sound and Sigh + Sound + Smell (table 18).

On table 18, it can also be observed the change in R^2 which represents 7% for sensory experience with sigh, sound and smell and 22% for sensory experience with sight and sound, representing this way the percentage increase in the variation explained by the addition of the interaction term. It can also be stated that this increase is statistically significant for only the sensory experience with sight and sound ($p < .0005$).

It can be concluded that the moderation of personality traits in the relationship between sense of power and cognitive flexibility is only significant in the sensory experience with sight and sound.

Table 18 – Moderation analysis by sensory experience – Sense of power as dependent variable and personality traits and cognitive flexibility as predictors

										Change statistcis	
			B	Std. Error	ß	t	Sig	R^2	adj. R^2	R^2 change	Sig. F Change
sight + sound + smell	1	(Constant)	2.947	1.000		2.947	0.005	0.078	0.047	0.078	0.092
		Cognitive Flexibility	0.268	0.153	0.221	1.746	0.086				
		Personality Traits	0.278	0.253	0.139	1.098	0.277				
	2	(Constant)	**3.323**	1.036		3.207	0.002	0.104	0.057	0.026	0.201
		Cognitive Flexibility	**0.245**	0.153	0.203	1.599	0.115				
		Personality Traits	**0.201**	0.259	0.100	0.776	0.441				
		CF_x_PT	**-0.113**	0.088	-0.167	-1.293	0.201				
sight + sound	1	(Constant)	2.119	0.805		2.633	0.011	0.216	0.190	0.216	0.001
		Cognitive Flexibility	0.672	0.187	0.481	3.586	0.001				
		Personality Traits	-0.056	0.236	-0.032	-0.236	0.814				
	2	(Constant)	**1.925**	0.790		2.437	0.018	0.268	0.231	0.052	0.045
		Cognitive Flexibility	**0.611**	0.185	0.437	3.305	0.002				
		Personality Traits	**0.091**	0.241	0.051	0.375	0.709				
		CF_x_PT	**-0.167**	0.081	-0.239	-2.049	0.045				

a. Dependent Variable: Sense of Power

b. Predictors: (Constant), Personality Traits, Cognitive Flexibility

Each of the items in the questionnaires regarding the personality traits item is used to analyze the type of personality in each of the five personality traits. In a total of 10 questions, there were 2 questions corresponding to each trait. As referred in the literature, the five traits are Openness, Agreeableness, Emotional Stability, Consciousness and Extroversion. Once determined that Personality Traits is in fact a moderator in the relationship between Cognitive Flexibility and Sense of Power, it was further analyzed the 5 traits of Personality and each of its impact in each sensory experience (see table 19).

Table 19 - Division by personality traits and the impact of sensory experience

Model	Unstandardized Coefficients		Standardized Coefficients	t	sig	R^2	R^2 Adjusted
	B	Std. Error	Beta				
Openness							
Constant	3.175	0.655		4.844	0.000		
1 (High)	0.42	0.148	0.338	2.846	0.006	0.114	0.1
Constant	2.991	0.77		3.885	0.000		
4 (Low)	0.436	0.169	0.321	2.583	0.012	0.103	0.088
Agreeableness							
Constant	3.537	0.633		5.588	0.000		
1 (High)	0.332	0.14	0.267	2.369	0.021	0.071	0.059
Constant	2.284	0.79		2.891	0.006		
4 (Low)	0.601	0.177	0.441	3.402	0.001	0.194	0.177
Emotional Stability							
Constant	2.349	0.699		3.358	0.001		
1 (High)	0.58	0.16	0.389	3.638	0.001	0.152	0.14
Constant	4.438	0.68		6.529	0.000		
4 (Low)	0.161	0.146	0.159	1.105	0.275	0.025	0.005
Consciousness							
Constant	3.688	0.656		5.62	0.000		
1 (High)	0.297	0.147	0.244	2.03	0.046	0.06	0.045
Constant	2.505	0.745		3.361	0.001		
4 (Low)	0.552	0.165	0.408	3.349	0.001	0.167	0.152
Extroversion							
Constant	3.229	0.614		5.259	0.000		
1 (High)	0.386	0.139	0.311	2.78	0.007	0.097	0.084
Constant	3.093	0.86		3.599	0.001		
4 (Low)	0.44	0.187	0.319	2.355	0.023	0.102	0.083

Source: Own elaboration

In **Openness**, both variable "Low" and "High" are significant (>0.05). However, by looking at the adjusted R^2, one can determine that for people with "high openness" the variable Cognitive Flexibility explains slightly more than for people with "low openness" (10% versus 8%)

In terms of **Agreeableness**, both variables are significant (sig. <0.05). When looking at the adjusted R^2, Low agreeableness clearly stands out. In Low Agreeableness about 14% of cognitive flexibility helps explaining Sense of Power, whereas in Hight Agreeableness the number drops to 5%.

Only High **Emotional Stability** is significant (sig 0.001<0.05). Individually, both Low and High Consciousness are significant for the model (sig. < 0.05). When observing the adjusted R^2, in High Emotional Stability about 14% of Cognitive Flexibility explains Sense of Power. However, in Low Consciousness the cognitive flexibility is not very important (less than 1%) in explaining Sense of Power.

High **Consciousness** has a Significance value 0,046. Low Consciousness on the other hand has a significance value of 0,001. Both are significant for the model (< 0.05).
Low Consciousness is significantly more important in explaining Sense of Power, in which cognitive flexibility is explaining about 15% of sense of power (Adjusted R squared = 0.152) opposed to 4% explained in High Consciousness ($R^2 = 0.045$)

High **Extroversion** has a Significance of 0.007 while Low Extroversion has Significance of 0.023. This means that they are both significant (<0.05).
Both variances, high and low extroversion, have the same importance in the relationship between cognitive flexibility and sense of power. Looking at the adjusted R^2, they both explain about 8% of the model.

6.2. Sensory Experience as a moderator on the relationship Sense of Power and Intention to Return

Even though it was previously concluded that Sense of Power did not significantly have an impact on Intention to Return, a further test was conducted to determine if with the addition of the variable sensory experience, it would become significant.

By looking at test table 20, it can be determined that the model is not significant (sig > 0.05). The adjusted R^2 change is not significant. Meaning that even with the insertion of the variable psychological distance, the relationship between sense of power and intention to return is still not significant, the variable does not moderate this relation.

Therefore, the hypothesis H3: Sensory Experience will moderate the relationship between sense of power and intention to return is not supported.

Table 20 – Moderation analysis total results – Intention to return as dependent variable and psychological distance and sense of power as predictors

									Change statistics	
		B	Std. Error	ß	t	Sig	R^2	adj. R^2	R^2 change	Sig. F Change
1	(Constant)	5.450	0.780		6.986	0.000	0.079[a]	0.006	0.006	0.682
	Sense of power	-0.101	0.142	-0.065	-0.715	0.476				
	Psychological Distance	0.033	0.071	0.042	0.459	0.647				
2	(Constant)	**5.280**	0.795		6.644	0.000	.127[b]	0.016	0.01	0.272
	Sense of power	**-0.071**	0.144	-0.045	-0.489	0.626				
	Psychological Distance	**0.035**	0.071	0.044	0.490	0.625				
	SPxPD	**-0.136**	0.123	-0.101	-1.104	0.272				

a. Dependent Variable: Intetion to return

b. Predictors: (Constant). Sense of power, psychological distance, SPxPD

Source: Own elaboration

7. Conclusion

7.1. Findings overview

A combination of different sensory stimulus was stated by Lindtrom (2008) to have much bigger impact on consumers and creates a stronger brand. This happens because, as stated by Spence (2002), the majority of the most amazing experiences people have in life are multisensory. This way, and to provide better experiences and more immersive ones, an increasing amount of companies are using use virtual technologies (Lau and Lee 2018). Therefore, this thesis was conducted on an experience in a Virtual environment. Along were studies in the model the concepts of cognitive flexibility, sense of power and return intentions.

Cognitive Flexibility, defined by Spiro, Coulson, Feltovich, and Anderson (1988) as a feature of executive functioning that supports diverse thinking and problem solving, was hypothesized and determined in this study to have a positive and significant effect on one's sense of power. It allows individuals to cope with an ever changing and complex environment (Easter and Schommer-Aikins, 2018). Power, which was described by Rucker, Galinsky and Dubois (2012) as pervasive and essential constituent of social systems and hierarchies, was inserted in this study in the notion of each person's own sense of power. That notion of sense of power was, and opposed to the literature, found to have no significant effect on the intention to return, also referred to a person's behavior. With the addition of the variable sensory experience, in which the individuals were impacted with different senses, the relationship between sense of power and intention to return still was not significant, neither there was a moderating effect by the variable sensory experience.

Personality traits, or attributes that each person possessed, are frequently divided in five big traits or factors of personality that explain personality attributes (Digman, 1990). As it is an important factor that differentiates each person, it was inserted in the model as a moderator and found to have an important and significant impact on the relationship between cognitive flexibility and sense of power.

7.2. Discussion

The positive effect of cognitive flexibility on sense of power, can be partially supported by the study by Anderson, John and Keltner (2012). Their study conclusions' on sense of power was that personal sense of power was coherent and organized in several levels of abstraction, they further stated that individuals can consistently measure their power in several forms of important relationships and groups, whether in single discrete dyadic interactions, longer-term relationships or in larger social groups. Supporting this notion, Anderson et al. (2012) concluded that the sense of power may continuously change depending on the situation and one's relationship with others. This means that people with higher sense of power easily adjust that power according to the group, the situation, the type of relationship. Essentially, that these individuals adjust easily. Therefore, possess a higher cognitive flexibility. Furthermore, individuals with high cognitive flexibility are less likely to doubt the necessity of change and they perceive less fear and much more positivism when facing changes (Chung, Su, & Su, 2012). An individual with high power has by assumption, less doubts, therefore confirming again, that cognitive flexibility has an impact on sense of power. Individuals with higher cognitive flexibility that adjust to new situations with ease, are much more likely to embrace virtual technology much better than those with low cognitive flexibility. The same goes for people with higher sense of power. They will show curiosity and promptness to try something new and adventurous such as VR.

Several studies have stated that an individual's subjective sense of power frequently has greater impact on behavior than the amount of power one actually possesses (Smith, Wigboldus, and Dijksterhuis, 2008) and that power not only alters consumption behavior, information processing, and a person's motivation but also it was also found to be related to consumers' purchasing behaviors such as the way they purchase, and their reactions to prices (Zou et al., 2014). When it comes to the second hypothesis, it was stated that sense of power has a positive and significant impact on return intention. This hypothesis was not verified.
The hypothesis was formed based on the literature and the main assumption that people with low power, feel an aversive psychological state, and to attenuate that state they will seek to compensate and diminish those feelings of powerlessness (Rucker and Galinsky, 2008).

However, the results of this study go with line with findings by Magee and Galinsky (2008). These authors suggested that there is no power-compensatory behaviour verified in low power

individuals and that there is no effect on spending for objects not associated with status. Posing the same idea, Rucker and Galinsky (2008) results show that power-induced differences through episodic recall expressively affected consumers' disposition to purchase products as a function of product status. When the products were not status related, power had no significant effect on the individuals' disposition to purchase. Therefore, there should be no relation to power.

In this study, unlike most studies, the object in question was not a status related product, in fact, it was not even a product, but a coffee place. The behavioral analysis in this study focused on intention to return to that coffee place. However, in the previous literature review, studies mainly focused on sense of power's impact on purchasing intentions and decisions, of either low or high-status products. However, in this study it was concluded that sense of power, unlike purchasing intentions, does not have an influence on the individual's behavior regarding intention to return. Even with the addition of another variable, psychological distance, the relationship is still not significant (table 20).

One aspect that most likely had an effect on the results, was the virtual environment. The need to understand and to study the effects that virtual reality might have on consumer behavior is essential for companies who which to adopt this technology. Does it usage have an impact sales? Does it affect customer retention? Does it increase customer's return intentions? Does it benefit somehow the companies' image? For this reason, it was decided to test if sense of power would affect intention to return in a café environment.

Focusing on return intentions, and by looking at table 14, results show differences in return intentions regarding the different sensory experiences. The means of the results are higher for respondents in the sensory experience with sight + sound + smell (proximal senses) than in those in the experience with just sight + sound (distal senses). The results show that participants reflected more interest and positive intentions to return to the virtual cafe when immersed in a proximal sensory experience than in a distal one. In addition, these results could also be explained by the wider variety of sensory cues. In one sensory experience the individual was exposed to three different senses (sight, sound and smell) and on the other was exposed to only two senses (sight and sound). As mentioned by Lidnstrom (2008) vision and hearing are not enough to impress consumers, the touch, smell and flavors are crucial in the

construction of a truly relevant brand. Meaning that the more senses an induvial is exposed to, the better.

The third hypothesis of this study stated that personality traits would play a moderating role on the relationship between cognitive flexibility and sense of power. This hypothesis has been proved valid and goes in line with the literature. Theorists in education have proposed that individual differences in critical thinking result from a combination of cognitive ability and personality dispositions (Clifford, Boufal and Kurtz, 2004). As mentioned by Roberts (2009) personality traits characterize the individuals' typical ways of responding to distinct situations trough lasting, automatic outlines of thoughts, feelings, and behaviors.

It is mostly consensual that most important individual differences in personality traits are organized into the ''big five'' personality dimensions: extraversion, agreeableness, conscientiousness, neuroticism (opposite of emotional stability) and openness to experience (Goldberg, 1993).

Looking at the distinct dimensions of personality, individuals that rate high in extroversion tend to be more sociable, energetic, talkative, outgoing, and enthusiastic (Costa and McCrae, 1992; Thoms, Moore, and Scott, 1996). These types of people report higher levels of self-efficacy and competence (Thoms et al., 1996). These individuals are therefore likely to possess higher sense of power and to be more cognitive flexible, and low extroverted people tend to be the opposite. As Martin and Rubin (1995) stated, cognitive flexibility refers to a person's self-efficacy in being flexible, and even though people may be aware that there are other way to behave in any situation they also need to believe that these are self-efficacious in bringing out the desired behavior. By looking at the results in table 21, we can see that people rating both higher and lower in extroversion, are both significant in explaining the relationship between cognitive flexibility and sense of power.

Molleman, Nauta, and Jehn (2004) and Van Vianen and De Dreu (2001) found that individuals who are low in neuroticism, that are more emotionally stable, are self-confident. People with self-confidence possess a higher sense of power than those with less confidence and are assumed to have enough confidence to react and adjust their behavior according to the different situations. The results found in this study go in line with the literature, people that are more emotionally stable (less neurotic) are much better in explaining the relationship between cognitive flexibility and sense of power (table 21).

Individuals high in agreeableness are friendly, helpful, altruistic, modest, trusted, and straightforward (Costa and McCrae, 1992). According to (Anderson and Galinsky 2006; Galinsky et al. 2003), inducing feelings of being powerful, as opposed to powerless, tends to foster optimism and action. Furthermore, people who tend to agree as opposed to disagree, tend to adjust better to the circumstances, and more open. As we can see in table 21, results show that people who are less agreeable are more important in explaining the relationship between cognitive flexibility and sense of power than those who are more agreeable.

High conscientious individuals are thorough, responsible, self-disciplined, organized, self-motivated, achievement-oriented and task-oriented (Barrick & Mount, 1991; Costa & McCrae, 1992; Goldberg, 1993). Previous research has also identified that high conscientious individuals are motivated to accomplish goals (Costa & McCrae, 1992). People with high sense of power are goal oriented specially when it comes to be able to influence others. It is interesting to find in the results that in fact people with lower consciousness are better in explaining the relation between cognitive flexibility and sense of power in the model (table 21).

Characteristics such as creativity, broad-mindedness, and willingness to experiment or to try new things have been used to describe individuals who are high in openness (LePine, 2003; Molleman et al., 2004). In addition, individuals who are high in openness are more flexible and creative (Roesch, Wee, and Vaughn, 2006). Both types of respondents, with high and low openness, were found to be significant in explaining the relationship between the variable's cognitive flexibility and sense of power.

Focusing on the fourth and final hypothesis regarding sensory experience and its moderating effect on the relation between sense of power and return intentions, the hypothesis was not verified. Once determined that sense of power had no significant effect on return intentions, the possibility that with the insertion of another variable, namely this fourth hypothesis, could make the relation significant. However, it did not happen. There was no distinction between the sensory experience with sight + sound and sight + sound + smell in the relationship between sense of power and return intentions. The relation between the two remains insignificant. It should be taken into account that the sensory experience was made before the

questionnaire, participants were sensory impacted before they were asked the questions. Therefore, when asked the questions to measure their sense of power and cognitive flexibility, they were no longer being exposed to the sensory experiences, not at the exact moment.

This study further contributed to the literature by supporting the study conducting by Elder et al (2017). It was applied the variable psychological distance through the analysis of the sensory experience. The results found that accordingly to Elder et al (2017) study, in the sensory experience with Sight + Sound (distal senses) the respondents imagined the coffee as being further away from them as opposed to the sensory experience with Sight + Sound + Smell (proximal senses) where the coffee was stated as being closer. Thus, it can be concluded that not only imagined senses can be psychologically more proximal or distal based on the maximum physical distance typically required for a stimulus to be sensed but the same happens for virtual reality. In this study it was not asked to the participants to "imagine" but to recall what they experienced in the virtual coffee shop.

7.3. Managerial Implications

The current dissertation provides practical implications for marketing managers who are looking for a different technological and sensorial approaches in their marketing strategies. Brands are facing several changes in the environment, as everything has become more technological and people are living on a digital basis. Also, every day, brands are trying to captivate client's five senses to capture their attention.

This study provided key elements that companies must pay attention to. The importance of the client's cognitive flexibility and how they adapt to the environment, this can be very important when designing a store for example. This cognitive flexibility will have an impact on the client's sense of power. Even though the sense of power will not impact the costumer's intention to return to the store, it will, according to the literature, impact their purchase behavior. Thus, it must be something companies should take into account.

Another finding in this study that can be truly beneficial for companies is that in the return intentions results, it was found that the participants responses were more positive when in a sensory experience with sigh, sound and smell then in an experience with just the senses of

sight and sound. This finding goes in line with studies by Lindtrom (2008), the more senses associated with a brand the more relevant a brand becomes.

Finally, and most importantly, the virtual reality technology as a mean to captivate clients and to maintain the existent ones. The impressiveness in VR, the curiosity it brings in people and desire to experiment can be an opportunity for brands. When asked about the return intentions to the virtual coffee place, most respondents responded positive intentions (table 14).

7.4. Limitations and future research

Considering the conclusions of the present research and the contributions it provided, this study still presents some limitations should be considered. First of all, the sample size is relatively restrictive, as the research relied on the data provided by 122 experiences. Although the number is considered, the results might have been better fused if the sample was larger.

Additionally, this study participants consisted of only Portuguese people. Future research could compare results between different cultures as the results are likely to be different among different cultures. Addressing the relationship of power status, for example, it was stated by Magee and Galinsky (2008) that the degree to which an individual or group is respected or esteemed by others is likely to vary across cultures.

It should also should be taken into account that in this study, the participants were first immersed in a VR experiment, in a virtual café, and then they were asked to fill the questionnaire to explore the variables sense of power, cognitive flexibility, personality traits, psychological distance and return intentions. In future research, it could be really interesting to insert the questionnaire while the participant was in the VR experience. This would most likely affect the results on psychological distance (it would not be a question of recalling but to actually visualizing the object) and on return intentions.

Finally, it could be interesting, for future studies, to analyze purchasing behavior instead of intention to return. Several authors have studied the impact of sense of power on purchase behavior, it could be interesting to explore if the results are the same when immersed in a virtual reality experience, a virtual store for example.

8. References

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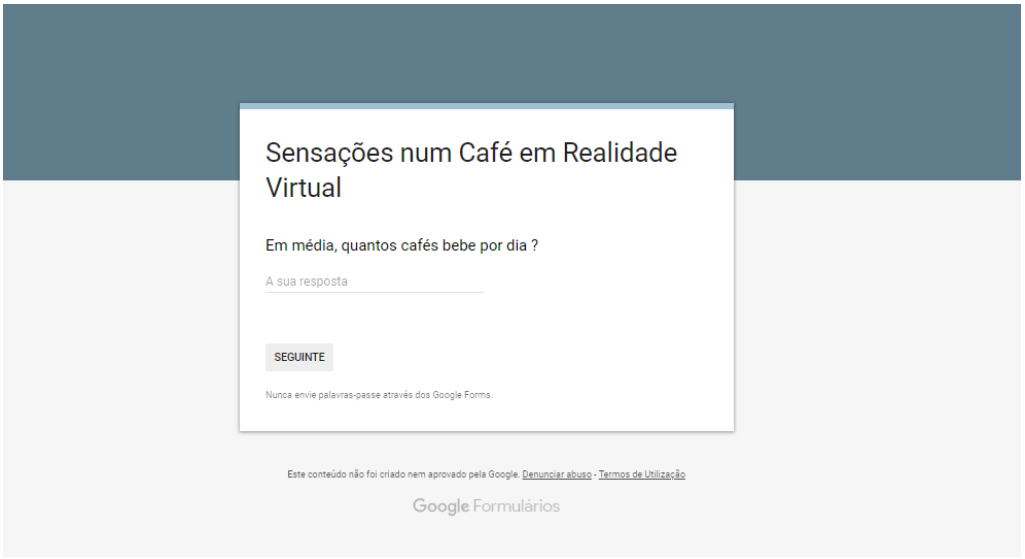
9. Appendix

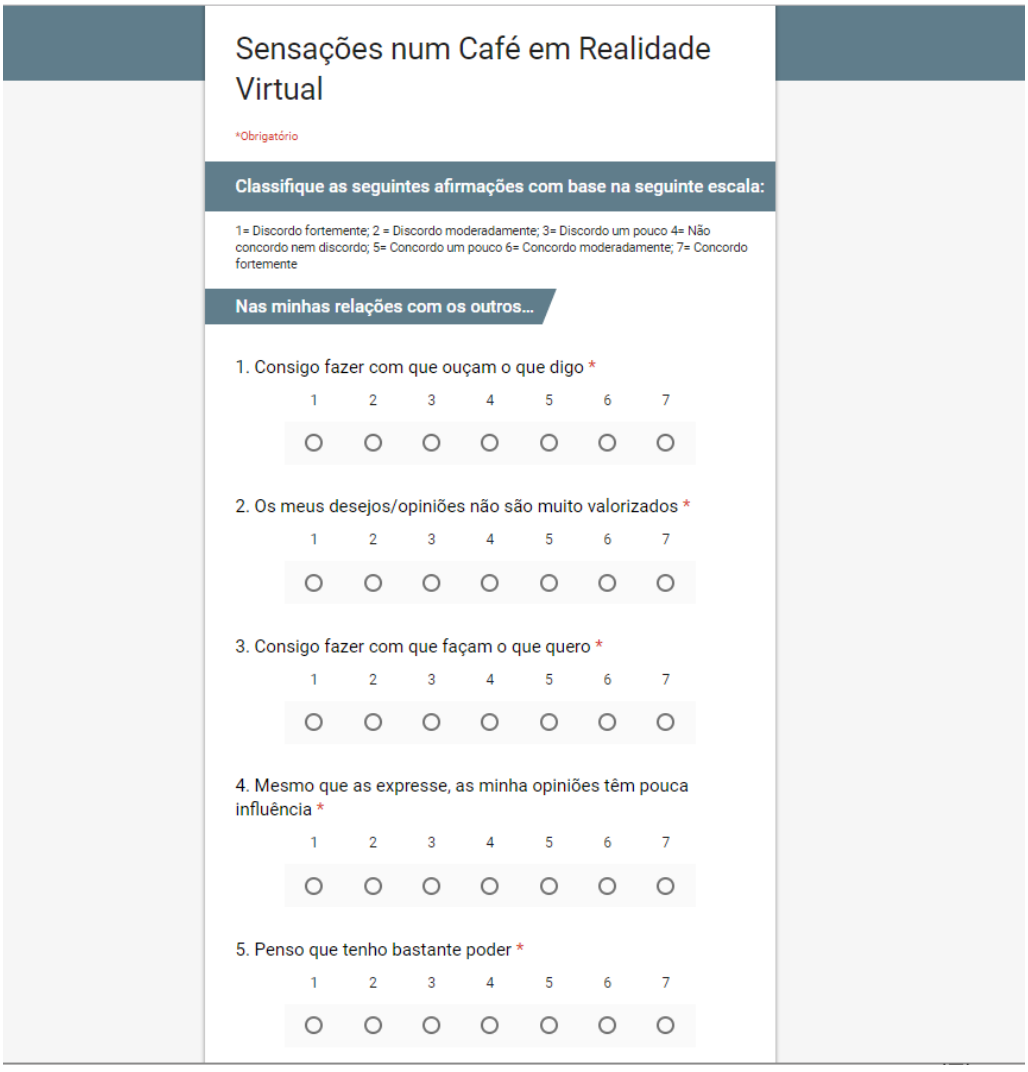
Appendix I – Measurements items in the questionnaire

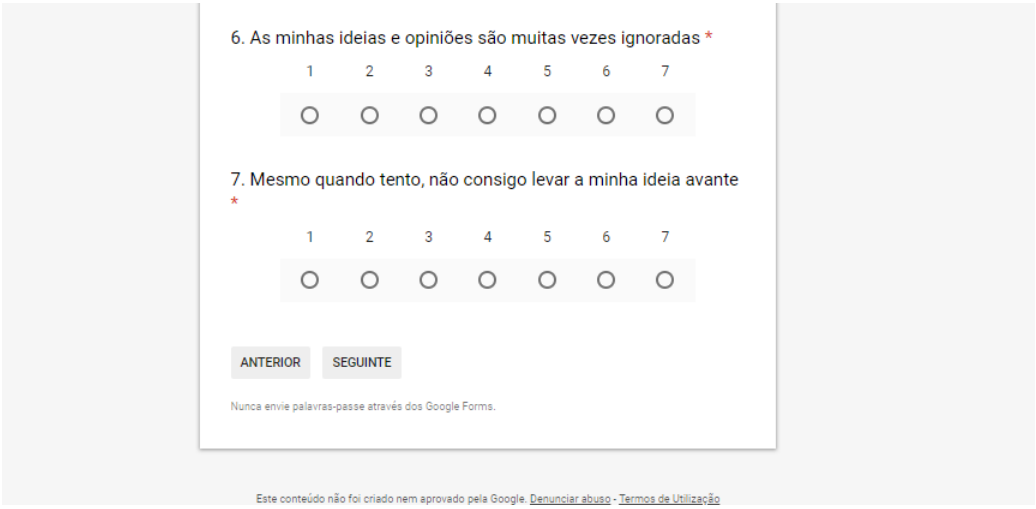
Constructs	Items	Portuguese	Source
Sense of Power	1. I can get him/her/them to listen to what I say. 2. My wishes do not carry much weight. 3. I can get him/her/them to do what I want. 4. Even if I voice them, my views have little sway. 5. I think I have a great deal of power. 6. My ideas and opinions are often ignored. 7. Even when I try, I am not able to get my way.	1. Consigo fazer com que ouçam o que digo 2. Os meus desejos/opiniões não são muitoo valorizados 3. Consigo fazer com que façam o que quero 4. Mesmo que me expresse, as minha opiniões têm pouca influência 5. Penso que tenho bastante poder 6. As minhas ideias e opiniões são muitas vezes ignoradas 7. Mesmo quando tento, não consigo levar a minha avante	Anderson, John, and Keltner (2011)
Cognitive Flexibility	1. I can communicate an idea in many different ways 2. I avoid new and unusual situations (Reversed) 3. I feel like I never get to make decisions (Reversed) 4. I can find workable solutions to seemingly unsolvable problems 5. I seldom have choices when deciding how to behave (Reversed) 6. I am willing to work at creative solutions to problems 7. In any given situation, I am able to act appropriately 8. My behavior is a result of conscious decisions that I make 9. I have many possible ways of behaving in any given situation 10. I have difficulty using my knowledge on a given topic in real-life situations (Reversed) 11. I am willing to listen and consider alternatives for handling a problem 12. I have the self-confidence necessary to try different ways of behaving	1. Consigo comunicar uma ideia de várias maneiras diferentes 2. Eu evito situações novas e diferentes 3. Eu sinto que nunca tenha oportunidade de tomar decisões 4. Eu consigo arranjar soluções funcionais para problemas aparentemenete insoluveis 5. Eu raramente tenho opções quando tenho de decidir como me comportar 6. Eu estou disposto a trabalhar com soluções creativas para problemas 7. Em qualquer situação, eu sou capaz de me comportar apropriamente 8. O meu comportamente é resultado de decisões conscientes que tomo 9. Eu tenho diversas maneiras de me comportar em qualquer situação 10. Eu tenho dificultade em usar o meu conhecimento num determinado assunto em situações reis 11. Eu estou disposto a ouvir e considerar possiveis alternativas para lidar com um problem 12. Eu tenho a auto-confiança necessária para experimentar diferentes formas de me comportar	Martin and Rubin (1995)
Personality Traits	1. is reserved 2. is generally trusting 3. Tends to be lazy 4. Is relaxed, handles stress well 5. Has few artistic interests 6. Is outgoing, sociable 7. Tends to find fault with others 8. Does a thorough job 9. Gets nervous easily 10. Has an active imagination	1. Reservada 2. Que tente a confiar 3. Tendencialmente preguiçosa 4. Relaxada, que lida bem com o stress 5. Com poucos interesses artisticos 6. Sociável e extrovertida 7. Com tendência a desculpabilizar-se 8. Perfecionista 9. Que fica nervosa com facilidade 10. Com uma imaginação muito activa	Guido, Peluso, Capestro and Miglietta (2015)
Intention to Return	1- I will recommend this restaurant to others . 2 - I will speak positively of this restaurant 3 - I plan to make repeat purchases at this restaurant	1- Vou recomendar este restaurante a outros 2- Vou falar positivamente deste restaurante 3- Tenciono fazer compras novamente neste restaurante	DiPietro and Levitt (2019) based on Jang et al. (2011)
Psychological Distance	The circles varied in the distance between them (1 representing the least overlap (i.e., the greatest distance between themselves and the object), and 9 representing a complete overlap (i.e., minimal dis- tance). Choose one of the nine pictures of circles that best represented the relationship with the object given the imagined sensory experience	Os circulos variam na distância entre si (1 representa a menor sobreposição (ex: a maior distância entre eles e o objecto) e 9 representa uma sobreposição completa (ex: distância mínima). Escolha uma das nove imagens que melhor representam a relação entre o objecto e a experiência sensorial imaginada.	Elder et al. (2017)

Appendix II – Virtual Café

Appendix III – Online Questionnaire Main Study – Sensory experience Sight + Sound + Smell







6. As minhas ideias e opiniões são muitas vezes ignoradas *

1 2 3 4 5 6 7

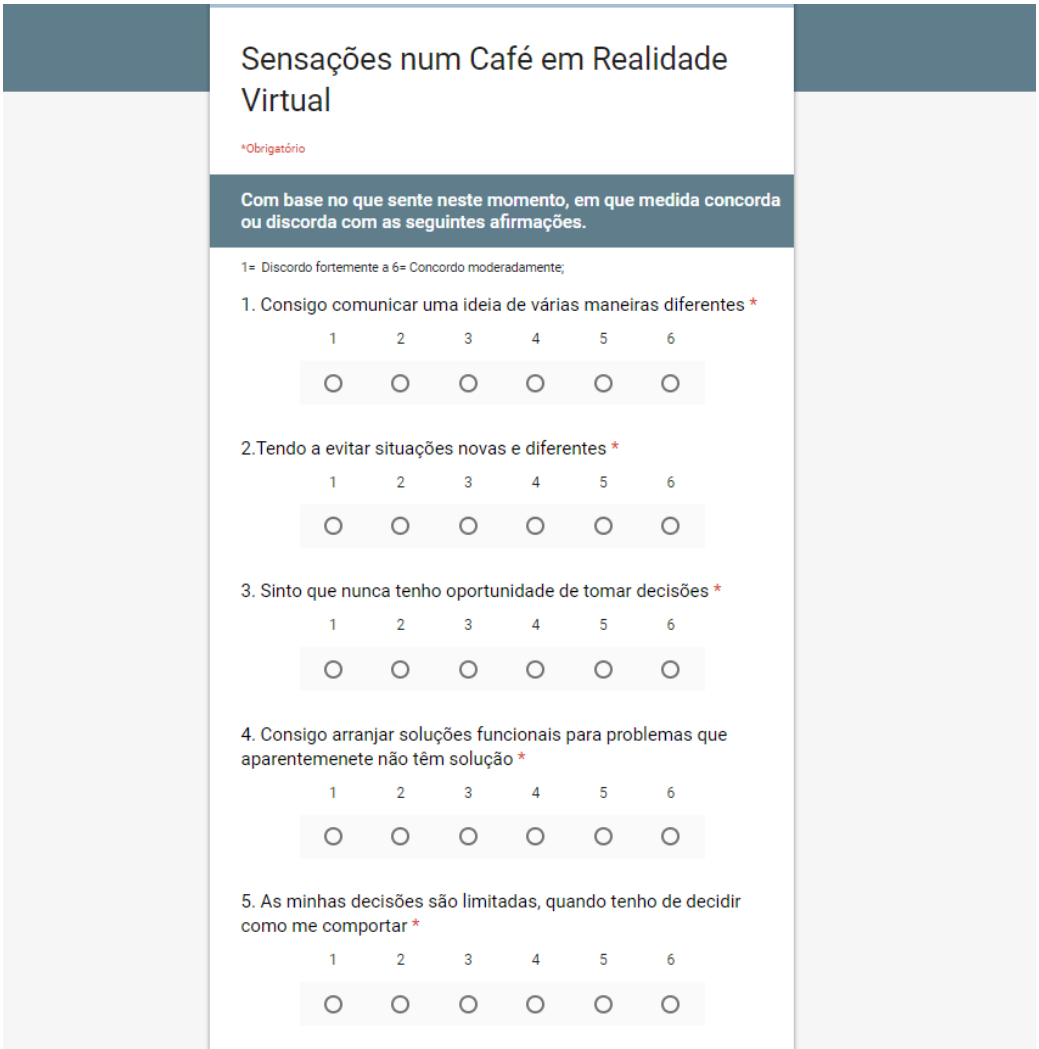
7. Mesmo quando tento, não consigo levar a minha ideia avante *

1 2 3 4 5 6 7

ANTERIOR SEGUINTE

Nunca envie palavras-passe através dos Google Forms.

Este conteúdo não foi criado nem aprovado pela Google. Denunciar abuso - Termos de Utilização



Sensações num Café em Realidade Virtual

*Obrigatório

Com base no que sente neste momento, em que medida concorda ou discorda com as seguintes afirmações.

1= Discordo fortemente a 6= Concordo moderadamente;

1. Consigo comunicar uma ideia de várias maneiras diferentes *

1 2 3 4 5 6

2.Tendo a evitar situações novas e diferentes *

1 2 3 4 5 6

3. Sinto que nunca tenho oportunidade de tomar decisões *

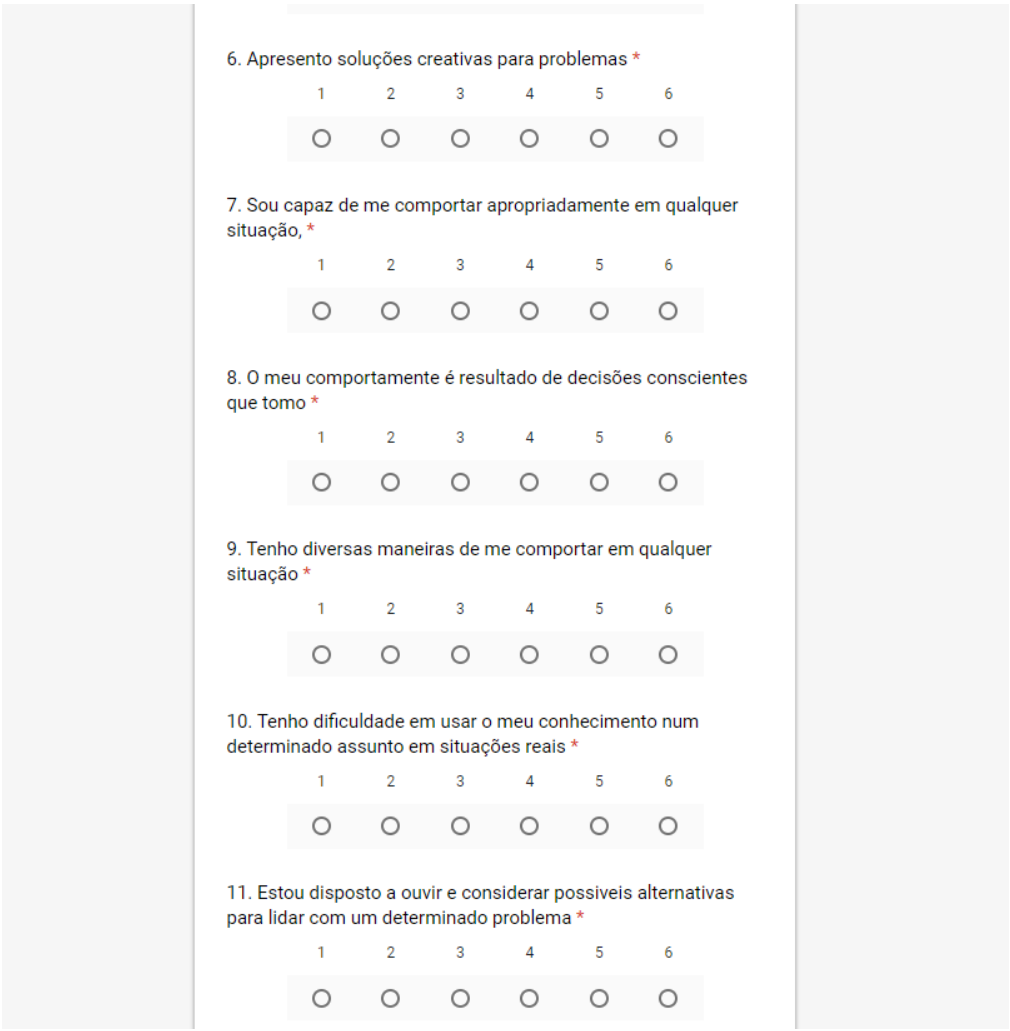
1 2 3 4 5 6

4. Consigo arranjar soluções funcionais para problemas que aparentemenete não têm solução *

1 2 3 4 5 6

5. As minhas decisões são limitadas, quando tenho de decidir como me comportar *

1 2 3 4 5 6



6. Apresento soluções creativas para problemas *

1 2 3 4 5 6

7. Sou capaz de me comportar apropriadamente em qualquer situação, *

1 2 3 4 5 6

8. O meu comportamente é resultado de decisões conscientes que tomo *

1 2 3 4 5 6

9. Tenho diversas maneiras de me comportar em qualquer situação *

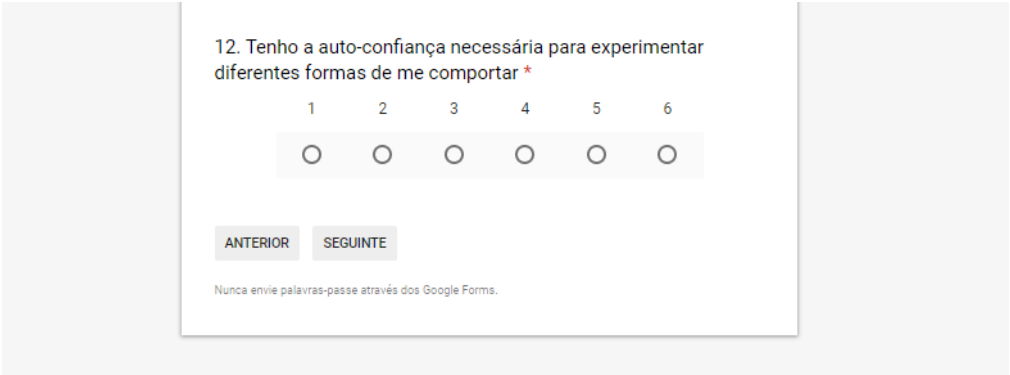
1 2 3 4 5 6

10. Tenho dificuldade em usar o meu conhecimento num determinado assunto em situações reais *

1 2 3 4 5 6

11. Estou disposto a ouvir e considerar possiveis alternativas para lidar com um determinado problema *

1 2 3 4 5 6



12. Tenho a auto-confiança necessária para experimentar diferentes formas de me comportar *

1 2 3 4 5 6

ANTERIOR SEGUINTE

Nunca envie palavras-passe através dos Google Forms.

Sensações num Café em Realidade Virtual

*Obrigatório

De que maneira as seguntes afirmações descrevem a sua personalidade?

1= Discordo fortemente; 2= Discordo um pouco 3= Não concordo nem discordo; 4= Concordo um pouco 5= Concordo fortemente

Vejo-me como uma pessoa...

1. Reservada *

1	2	3	4	5
○	○	○	○	○

2. Que tente a confiar *

1	2	3	4	5
○	○	○	○	○

3. Tendencialmente preguiçosa *

1	2	3	4	5
○	○	○	○	○

4. Relaxada, que lida bem com o stress *

1	2	3	4	5
○	○	○	○	○

5. Com poucos interesses artisticos *

1	2	3	4	5
○	○	○	○	○

5. Com poucos interesses artisticos *

1	2	3	4	5
○	○	○	○	○

6. Sociável e extrovertida *

1	2	3	4	5
○	○	○	○	○

7. Que tende a criticar os outros *

1	2	3	4	5
○	○	○	○	○

8. Perfecionista

1	2	3	4	5
○	○	○	○	○

9. Que fica nervosa com facilidade *

1	2	3	4	5
○	○	○	○	○

10. Com uma imaginação muito activa *

1	2	3	4	5
○	○	○	○	○

ANTERIOR SEGUINTE

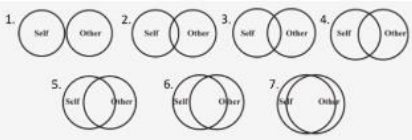
Nunca envie palavras-passe através dos Google Forms.

Sensações num Café em Realidade Virtual

*Obrigatório

Na experiência que acabou de fazer, havia uma chávena de café em cima da mesa. Focando-se somente no sentido do olfacto imagine uma experiência sensorial em que interage esse café. Está a cheirar o café.

Na seguinte imagem estão representados dois circulos. Um dos circulos representa-o a si ("self"), e o outro circulo representa o café ("other").

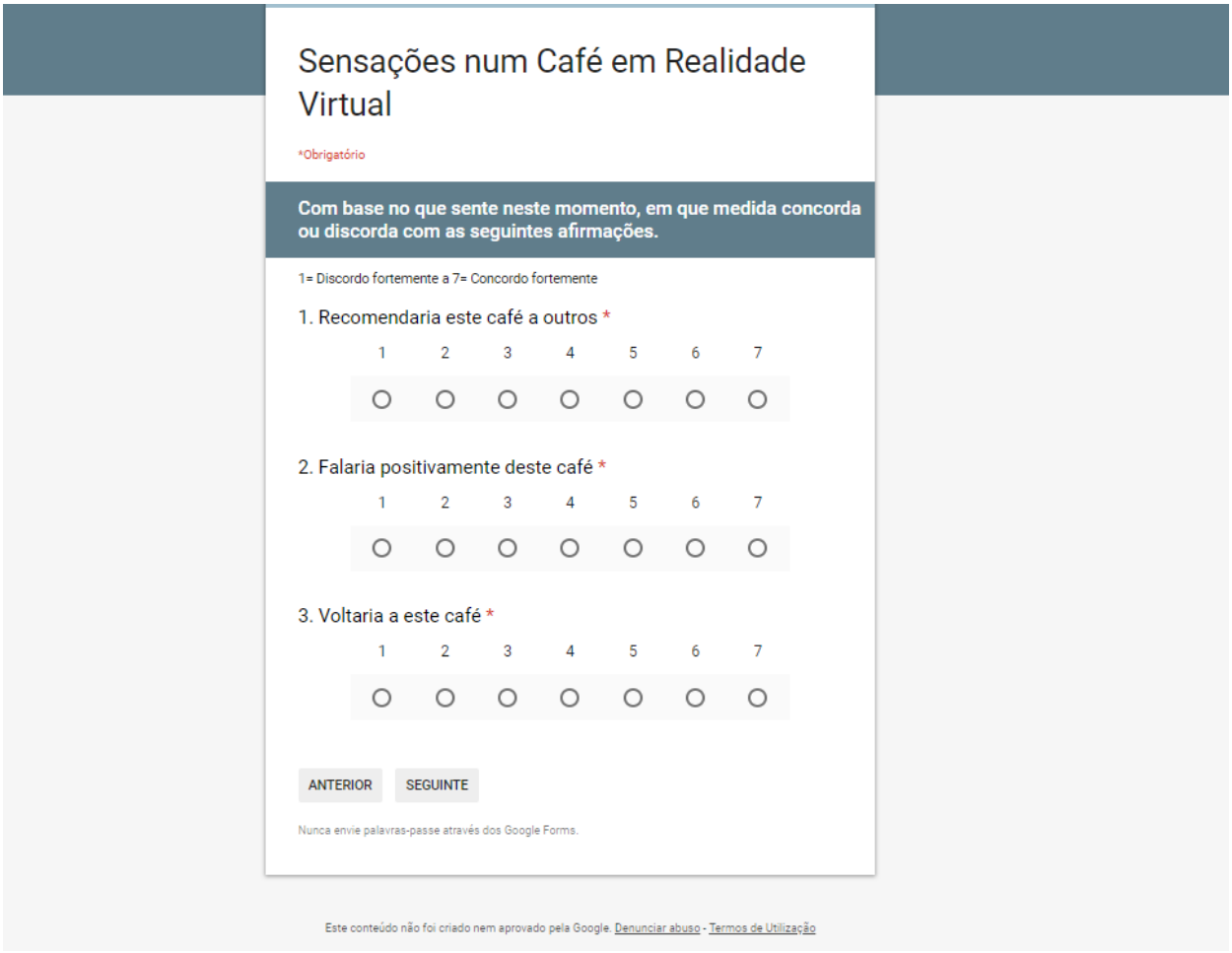


Com base na experiência sensorial que imaginou, escolha a imagem que melhor representa a relação entre si e o café *

- ○ 1.
- ○ 2.
- ○ 3.
- ○ 4.
- ○ 5.
- ○ 6.
- ○ 7.

ANTERIOR SEGUINTE

Nunca envie palavras-passe através dos Google Forms.



Sensações num Café em Realidade Virtual

*Obrigatório

Com base no que sente neste momento, em que medida concorda ou discorda com as seguintes afirmações.

1= Discordo fortemente a 7= Concordo fortemente

1. Recomendaria este café a outros *

1	2	3	4	5	6	7
○	○	○	○	○	○	○

2. Falaria positivamente deste café *

1	2	3	4	5	6	7
○	○	○	○	○	○	○

3. Voltaria a este café *

1	2	3	4	5	6	7
○	○	○	○	○	○	○

ANTERIOR SEGUINTE

Nunca envie palavras-passe através dos Google Forms.

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Sensações num Café em Realidade Virtual

*Obrigatório

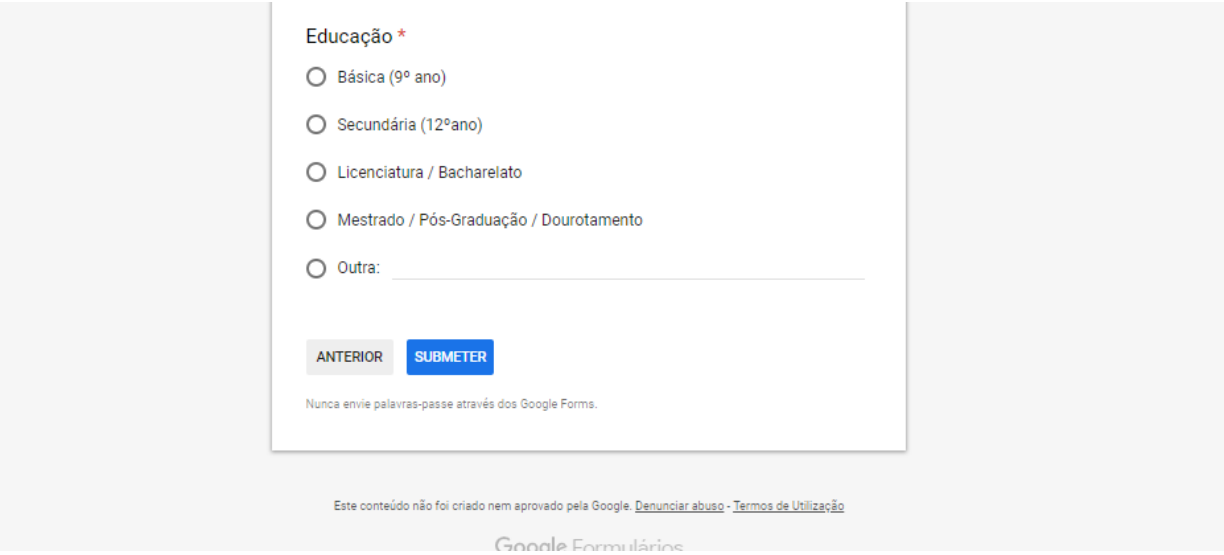
Perfil

Género *

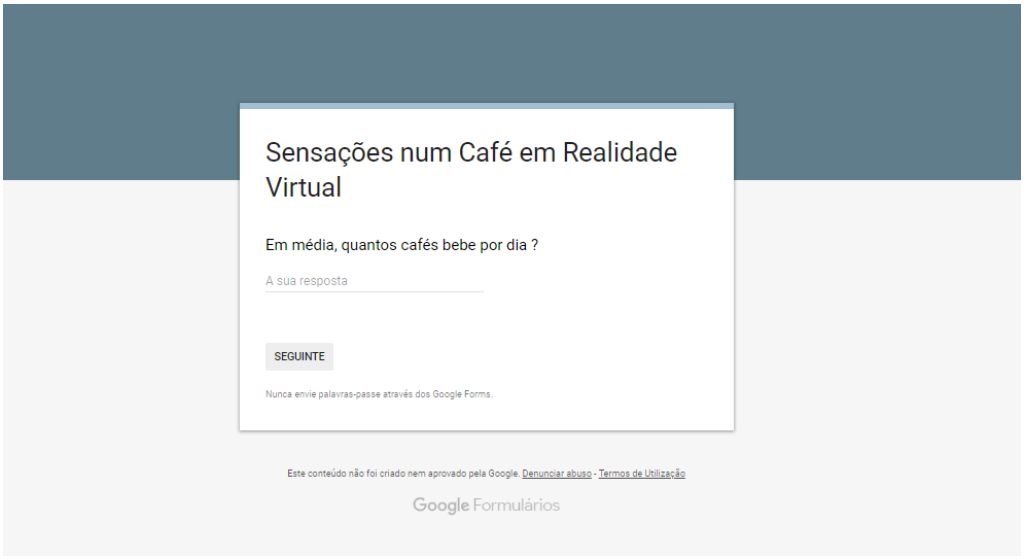
- ○ Feminino
- ○ Masculino

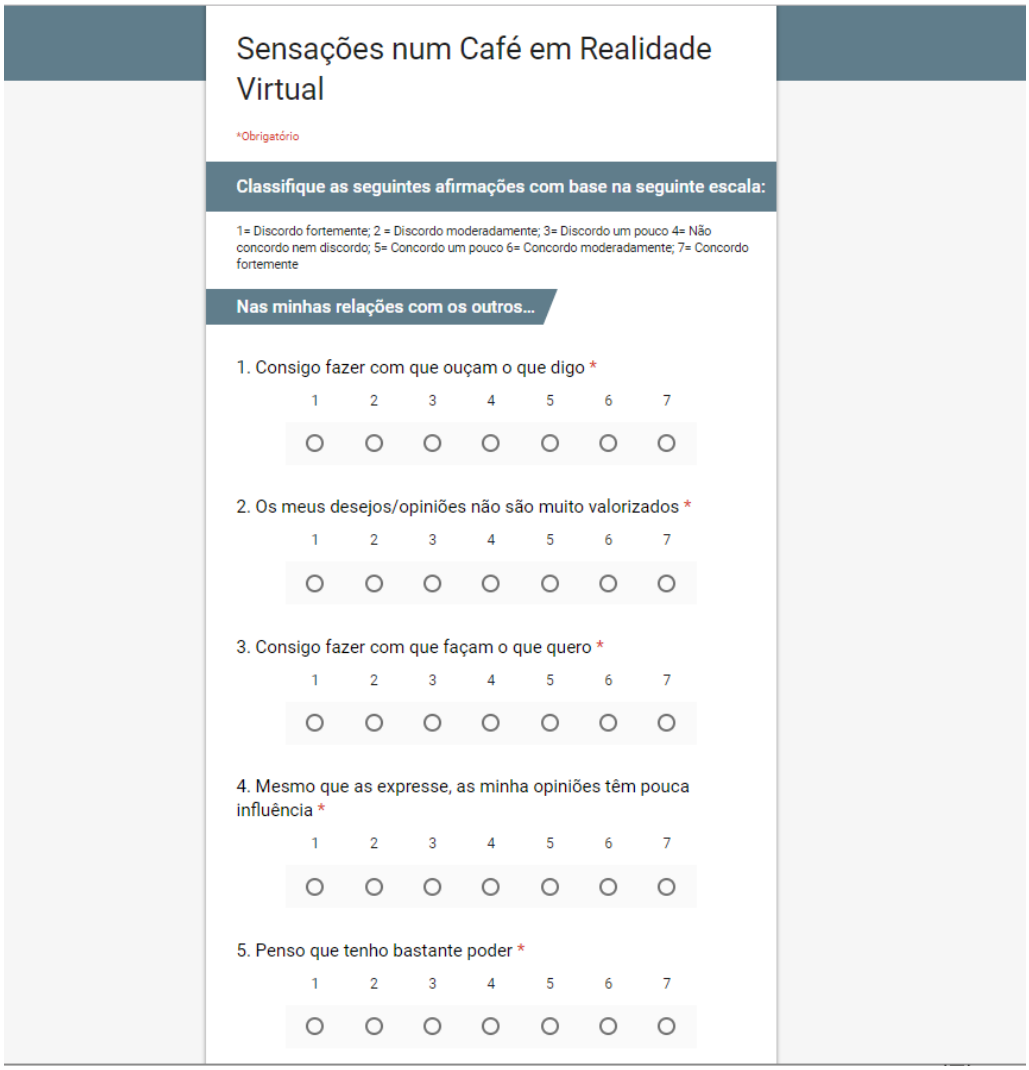
Idade *

- ○ 18-20
- ○ 21 - 25
- ○ 26-30
- ○ 31 - 35
- ○ 36 - 40
- ○ 41-45
- ○ 46-50
- ○ +50
- ○ Outra: _____



Appendix IV – Online Questionnaire Main Study – Sensory experience Sight + Sound





Sensações num Café em Realidade Virtual

*Obrigatório

Classifique as seguintes afirmações com base na seguinte escala:

1= Discordo fortemente; 2 = Discordo moderadamente; 3= Discordo um pouco 4= Não concordo nem discordo; 5= Concordo um pouco 6= Concordo moderadamente; 7= Concordo fortemente

Nas minhas relações com os outros...

1. Consigo fazer com que ouçam o que digo *

1 2 3 4 5 6 7

2. Os meus desejos/opiniões não são muito valorizados *

1 2 3 4 5 6 7

3. Consigo fazer com que façam o que quero *

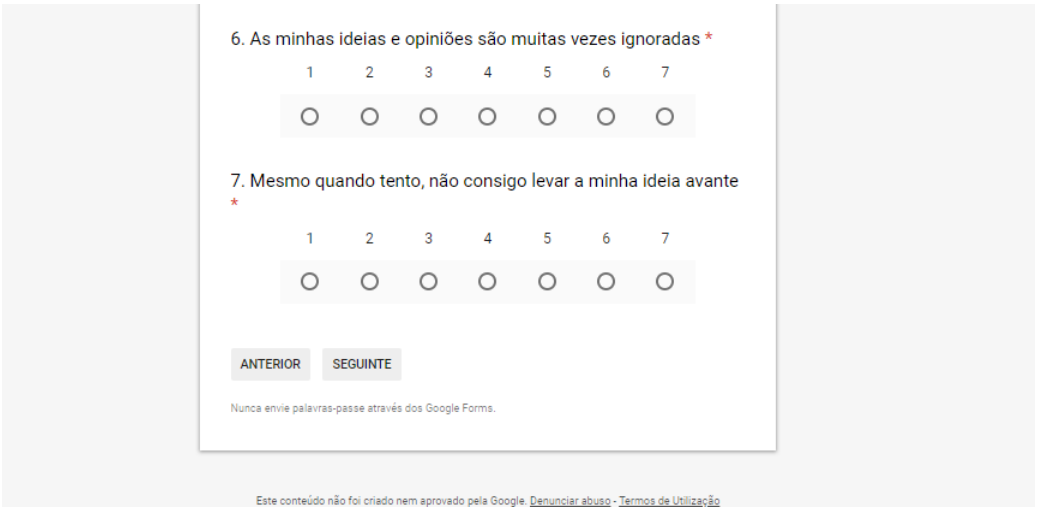
1 2 3 4 5 6 7

4. Mesmo que as expresse, as minha opiniões têm pouca influência *

1 2 3 4 5 6 7

5. Penso que tenho bastante poder *

1 2 3 4 5 6 7



6. As minhas ideias e opiniões são muitas vezes ignoradas *

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7. Mesmo quando tento, não consigo levar a minha ideia avante *

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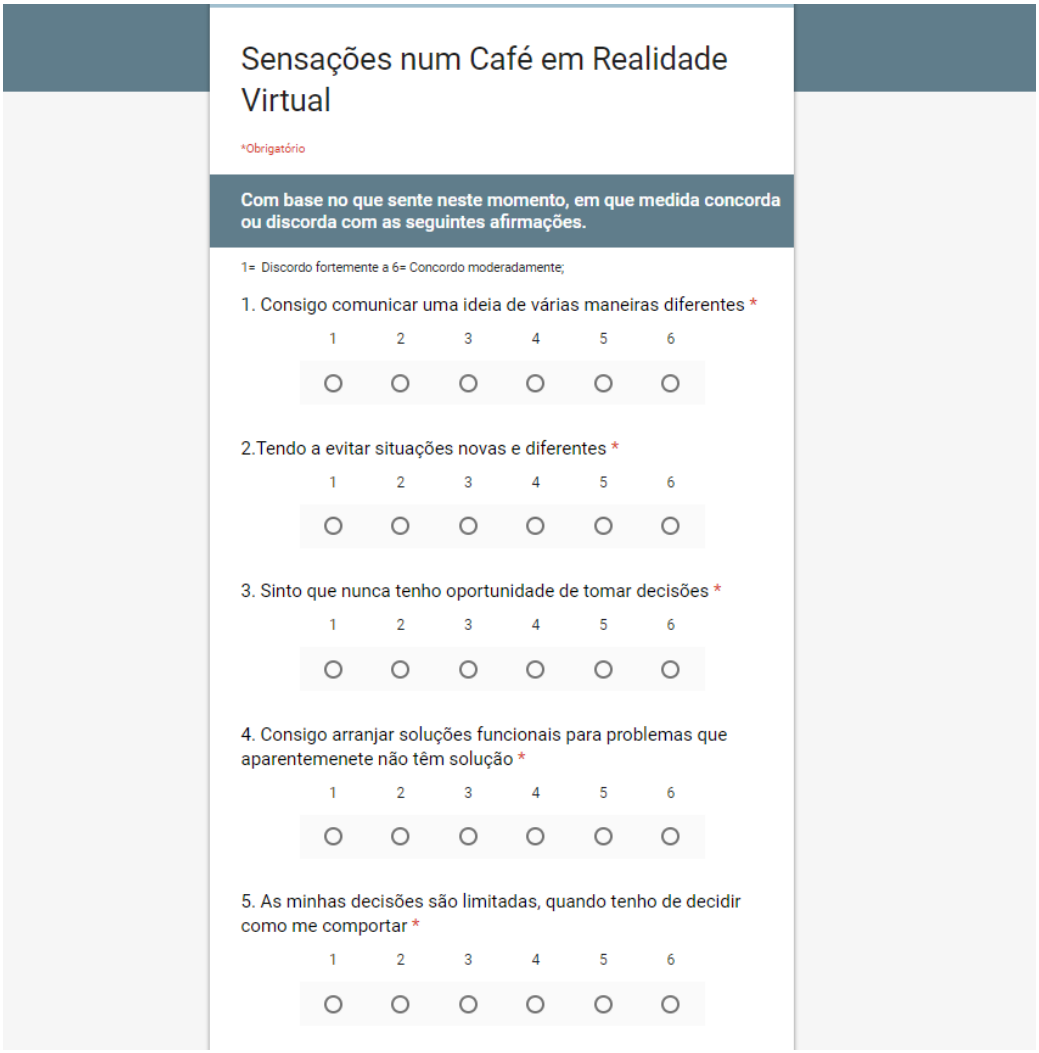

Sensações num Café em Realidade Virtual

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1	2	3	4	5	6
○	○	○	○	○	○

2.Tendo a evitar situações novas e diferentes *

1	2	3	4	5	6
○	○	○	○	○	○

3. Sinto que nunca tenho oportunidade de tomar decisões *

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4. Consigo arranjar soluções funcionais para problemas que aparentemenete não têm solução *

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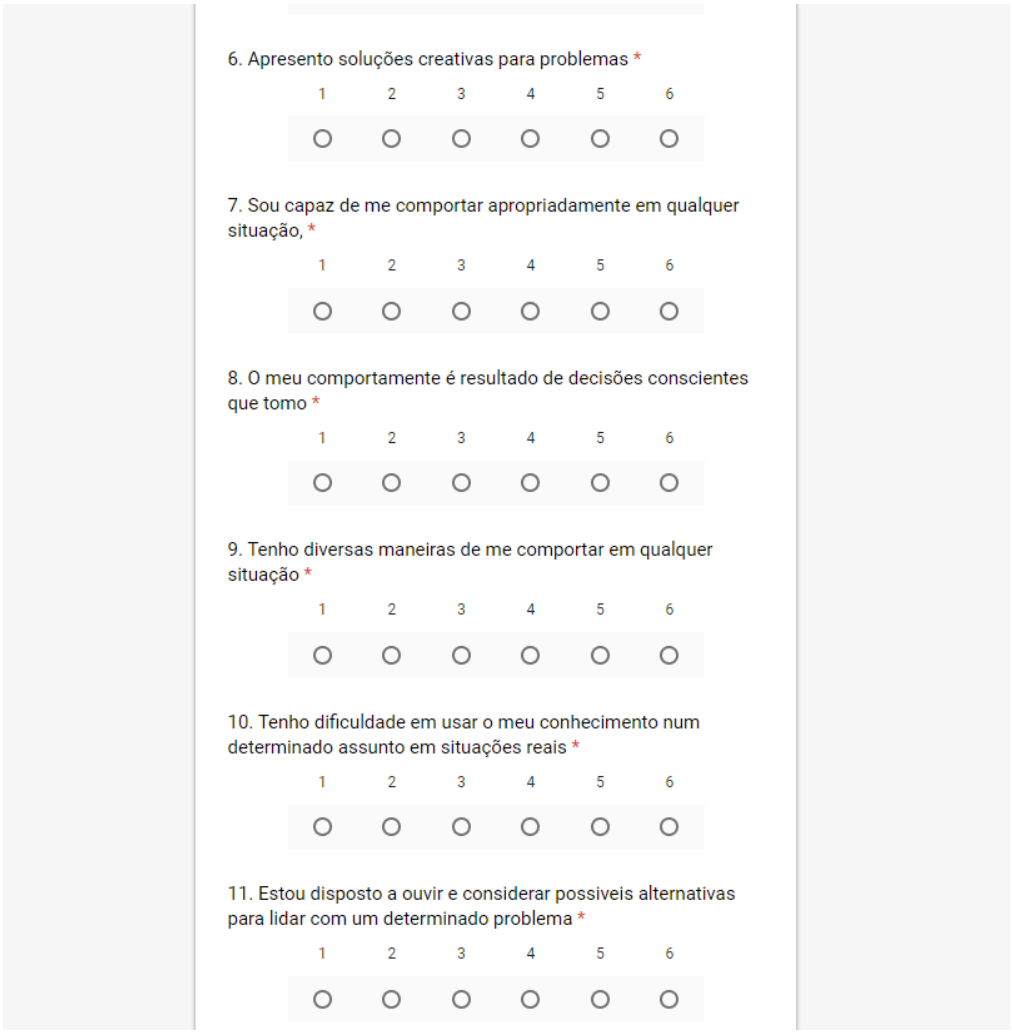

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8. O meu comportamente é resultado de decisões conscientes que tomo *

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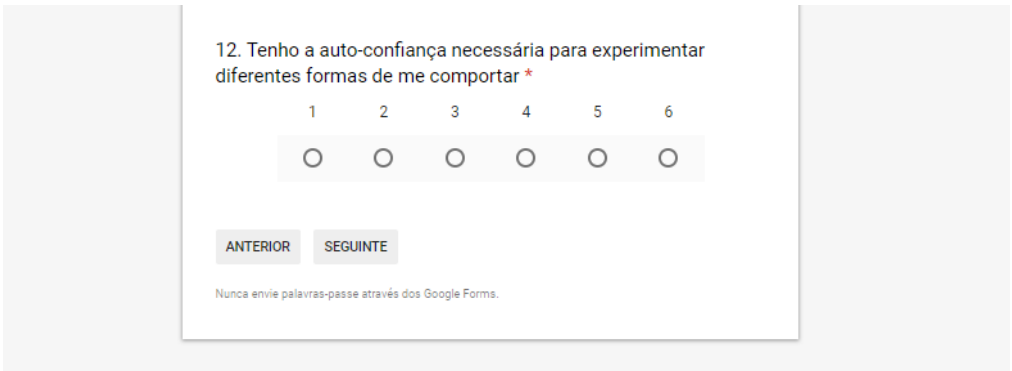

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4. Relaxada, que lida bem com o stress *

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○	○	○	○	○

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○	○	○	○	○

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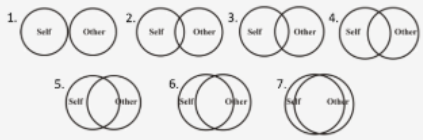

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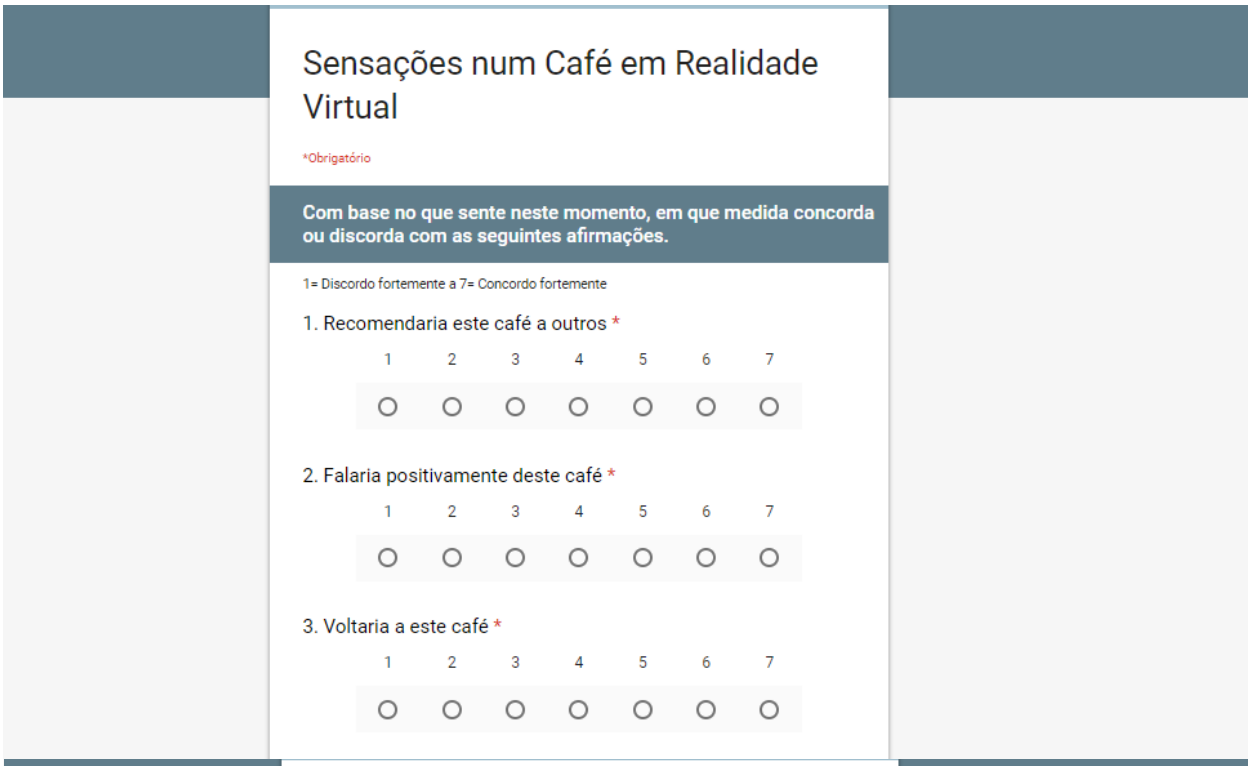
- ○ 1.
- ○ 2.
- ○ 3.
- ○ 4.
- ○ 5.
- ○ 6.
- ○ 7.

ANTERIOR SEGUINTE



Sensações num Café em Realidade Virtual

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1. Recomendaria este café a outros *

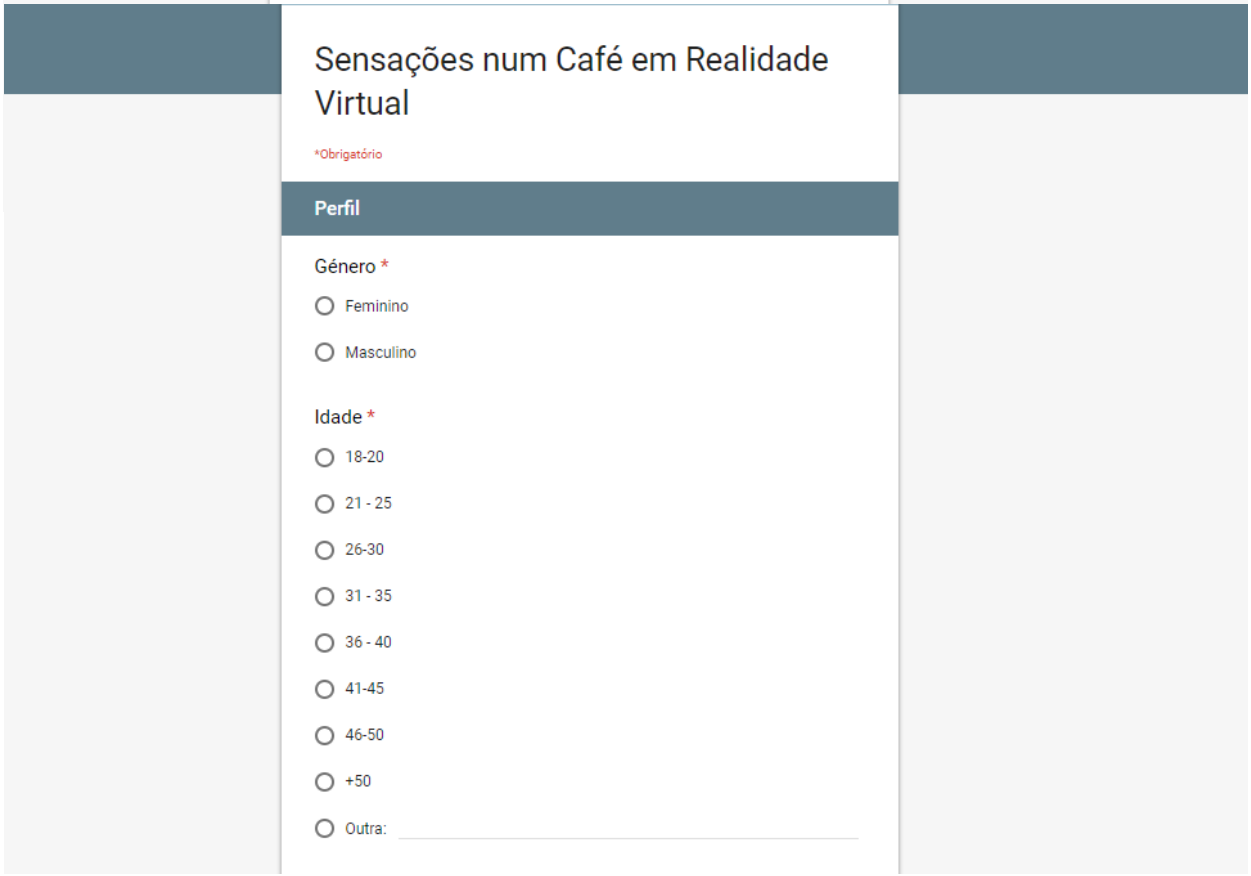
1	2	3	4	5	6	7
○	○	○	○	○	○	○

2. Falaria positivamente deste café *

1	2	3	4	5	6	7
○	○	○	○	○	○	○

3. Voltaria a este café *

1	2	3	4	5	6	7
○	○	○	○	○	○	○



Sensações num Café em Realidade Virtual

*Obrigatório

Perfil

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- ○ Masculino

Idade *

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- ○ 21 - 25
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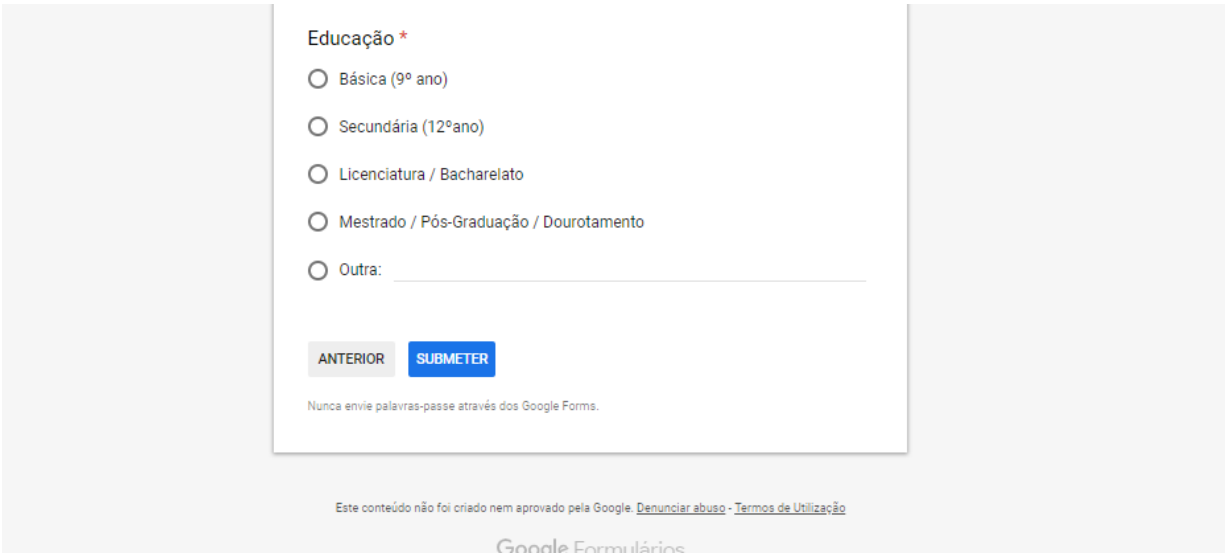
- ○ 31 - 35
- ○ 36 - 40
- ○ 41-45
- ○ 46-50
- ○ +50
- ○ Outra: _____


Educação *
Básica (9º ano)
Secundária (12ºano)
Licenciatura / Bacharelato
Mestrado / Pós-Graduação / Dourotamento
Outra:
ANTERIOR
SUBMETER
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