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ENHANCING MARKETING STRATEGIES WITH AUGMENTED REALITY AND WORD OF MOUTH

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Master in Marketing

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PhD Álvaro de Borba Cruz Lopes Dias, , Associate Professor with Aggregation,
ISCTE - Instituto Universitário de Lisboa

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BUSINESS
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Department of Marketing, Operations and General Management

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Resumo

Na nova era do marketing, os paradigmas tradicionais estão a ser substituídos por abordagens inovadoras. O Word of Mouth (WOM) emergiu como uma força poderosa nas estratégias de marketing, utilizando a influência de recomendações e narrativas de consumidores para impulsionar a percepção de marca e o envolvimento do consumidor. Simultaneamente, a Realidade Aumentada (AR) tem reformulado o panorama do marketing, permitindo às organizações envolverem os consumidores em experiências imersivas e interativas. Esta combinação pode redefinir as estratégias de marketing, permitindo criar experiências personalizadas e influentes para clientes.

Este estudo teve como objetivo explorar como as empresas podem melhorar as estratégias de marketing, focando-se na otimização do WOM por meio da integração estratégica de AR. Utilizando a metodologia de Partial Least Squares Structural Equation Modeling (PLS-SEM), investigou-se o impacto da inspiração, benefícios utilitários e hedónicos, qualidade aumentada percebida e atitude relativamente à aplicação no WOM.

Os resultados revelaram que inspiração, benefícios utilitários, qualidade aumentada percebida e atitude em relação à aplicação influenciam significativamente o WOM, ao contrário dos benefícios hedónicos. Notavelmente, a atitude relativamente à aplicação atuou como mediadora entre inspiração e WOM, e entre benefícios utilitários e WOM. Além disso, a atitude relativamente à aplicação não desempenhou um papel mediador entre a qualidade aumentada percebida e WOM, nem entre benefícios hedónicos e WOM.

Estes resultados oferecem observações valiosas para que através da utilização de AR, as empresas possam desenvolver estratégias de marketing mais eficazes que estimulam o WOM.

Keywords: Word of Mouth; Realidade Aumentada; Marketing

JEL Classification System: M31, L86

Abstract

In the new era in marketing, traditional paradigms are giving way to innovative approaches. Word of Mouth (WOM), has emerged as a powerful force in modern marketing strategies, using the influence of personal recommendations and consumer narratives to impact brand perception and drive consumer engagement. Simultaneously, Augmented Reality (AR) is reshaping the marketing landscape allowing brands to engage consumers in immersive and interactive experiences. Combining WOM with AR has the potential to redefine marketing strategies design, empowering brands to create more personalized and influential customer experiences.

This study aimed to explore how businesses can enhance their marketing strategies, with a specific focus on optimizing WOM by strategically integrating AR. Using Partial Least Squares Structural Equation Modeling (PLS-SEM) methodology, the research investigated the impact of inspiration, utilitarian benefits, hedonic benefits, perceived augmented quality, and attitude towards the app on WOM.

The findings revealed that inspiration, utilitarian benefits, perceived augmented quality, and attitude towards the app significantly influence WOM. Notably, attitude towards the app acted as a mediator between inspiration and utilitarian benefits, contributing to WOM. However, hedonic benefits did not have a significant influence on WOM. Furthermore, attitude towards the app did not play a mediator role between perceived augmented quality and hedonic benefits in significantly affecting WOM.

These results provide valuable insights for businesses seeking to enhance their marketing strategies by leveraging AR technology, with implications for designing more effective marketing strategies to stimulate positive WOM.

Keywords: Word of Mouth; Augmented Reality; Marketing,

JEL Classification System: M31, L86

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1. Introduction

In the ever-evolving digital age, characterized by the continuous shift of consumer behavior, technology, and communication channels, the field of marketing is experiencing a significant and profound transformation. The new age which we have been entering has ushered significant changes to traditional marketing methodologies and concepts, influenced by technological breakthrough and shifting consumer preferences. This evolution and transformation mark the beginning of a new era in marketing, where the combination of the two powerful forces, technology and customer behavior, presents new possibilities and challenges. Nowadays, marketing extends beyond physical borders and into the digital realm and in order to remain competitive in this digital age, companies in all industries need to adapt their strategies and change their business approach by diversify their marketing strategies and satisfy the demands and expectations of their customers.

The extraordinary technological progress that has been shown in recent years has significantly revolutionized the world, altering the ways in which we interact with the digital and physical worlds, from the way we learn, work, have fun, and even shop. The concept of Augmented Reality (AR) has emerged as one of the most noteworthy hallmarks of this technological revolution and what was once only a vision of the future has now become an integral component of our day-to-day lives. AR combines the digital world into the real world, since it is a technology that superimposes virtual elements onto the actual world, creating a digital overlay on top of the physical environment. These components are derived from computer-generated products that are created by receiving and analyzing user information via input sensors. AR functions by enhancing user's current perception of reality and it does not eliminate or diminish any other component, instead, it adds and strengthens (Ronaghi & Ronaghi, 2022). AR has evolved greatly due to the advances conquered on making this technology available on portable devices like our smartphones. From visualizing products in real-world environments to creating immersive interactive experiences, AR has fundamentally changed the way we consume information, shop, and have fun. However, it's not only changing the consumer's daily lives, is also challenging businesses management by offering innovative tools and solutions that enhance efficiency, customer engagement, and decision-making process. AR assists with providing immersive and interactive training experiences, provide remote assistance to both customers and employes, provide augmented data visualization,

streamlines inventory management, and improves so many more core business tasks, but most of all, it's impacting the marketing field.

AR has significantly transformed the marketing industry by bringing a new layer of customer interaction and engagement. AR technologies empower companies to engage customers with captivating experiences that are immersive and interactive, going beyond the limitations of the physical world. The growing influence and significance of AR in the field of Marketing, has led to the emergence of the concept of AR Marketing, which can be characterized as a strategic approach that combines digital elements or information into a person's perception of the real world, in order to highlight the benefits for consumers and achieve organizational goals through the generation of value (Rauschnabel et al., 2019). Augmented Reality is considered to be a smart technology that adds value to retailers by being able to influence customer engagement as well as purchasing decisions and can be varyingly used in-store and out-of-store including at home (Dacko, 2017). AR applications allow consumers to visualize products seamlessly integrated into their personal environments, enhancing their decision-making processes and creating a deep connection with brands. With the growth of AR, businesses are presented with a unique opportunity to create new and engaging marketing experiences. Using the appeal of this disruptive technology and forward-thinking marketers may now use AR to design captivating brand experiences, develop more engaging advertisements, and empower customers to experience products and services in innovative manners (Scholz & Smith, 2016). Currently, several organizations are already using this technology to provide completely different experiences to the customers. Companies such as L'Oréal, Amazon, Gucci, ASOS, Sephora, IKEA, BMW, Coca-Cola and McDonalds have used AR to design interactive advertising and packaging, elevate retail experiences, and develop captivating games (Scholz & Smith, 2016).

Consumer behavior is a sophisticated combination of several elements, often motivated by a need for tailored experiences and reliable recommendations. Word of Mouth (WOM) is crucial in influencing consumer decisions, it's considered to be one of the oldest forms of Marketing and it refers to process by which customers may share information and recommendations that influence the opinions of others, either in favor or against certain products, organizations, or services (Ismail & Spinelli, 2012). This informal way of sharing information between individuals was once limited to in person discussions but has now extended its reach to the online sphere, exerting a significant and widespread impact on contemporary marketing. As consumers interact and communicate in a linked digital world, WOM has evolved into a powerful online phenomenon. The primary advantage of this approach

is its ability to effectively use the persuasive power of individuals endorsements and genuine stories, which may shape how consumers see a brand and generate deep connection with them.

The influence of WOM is enhanced by the widespread use of social media platforms, discussion forums, online reviews, and other digital channels, allowing it to create a cascade effect throughout large communities of prospective customers and reaching global audiences. The effect of recommendations from friends, relatives, or internet reviews on purchase choices is extremely important since it removes the layer of possible manipulation and commercial hidden purposes which makes WOM much more persuasive and powerful specially when compared with traditional marketing channels (Kats & Lazarsfeld, 1955). In the present era of digital connectivity, consumers possess more knowledge and discernment, depending on WOM to explore the extensive range of offered products and services.

Combining WOM and AR creates a powerful synergy in the realm of consumer engagement and represents an intriguing and unprecedented opportunity for marketers. By intersecting authentic and honest customer discussions and captivating digital experiences, organizations have the capacity to redefine the paradigm for marketing strategies. AR enhances decision confidence and comfort and stimulates good WOM (Heller et al., 2019). When these two pillars are well integrated, consumers do not only explore offerings in a highly interactive and innovative manner but also instantly feel the will to share their experiences with their social circles. This sharing of augmented experiences amplifies WOM's impact, making it a dynamic tool for businesses to enhance brand awareness and foster loyalty. As users transform into advocates, their genuine endorsements and shared AR experiences may trigger a cumulative impact, resulting in enhanced brand awareness and eventually, increasing the results of the organization. The fusion of WOM and AR represents an innovative strategy for establishing customer trust and engagement in the era of digital technology.

Organizations are eager to invest in augmented reality but they frequently fail to realize the full potential of these technologies and the best way to create a personalized approach for their firms. This is mostly due to the lack of substantial research showing its measurable effects in real-world situations (Tan et al., 2022) but it’s also due to knowledge gaps, creative limits, and a resistance to change. Embracing a culture of innovation, investing in employee training, and fostering a mindset of adaptability can help organizations overcome these challenges and unlock the countless opportunities that emerging technologies bring. However, it is extremely important to help organizations and scholars understand the full potential of the junction of these two pillars and provide suggestions and recommendations on how to use it to obtain the best possible outcome.

The current dissertation intends to focus on how, in this rapidly changing world, organizations may enhance their marketing strategies by strategically incorporating AR and by leveraging the immense potential of WOM. More specifically, this research will investigate the influence of inspiration, utilitarian benefits, hedonic benefits, perceived augmented quality, and attitude towards the app in WOM through the use of an AR application. Therefore, this thesis aims to answer the main research question which is: How can organizations enhance their marketing strategies by strategically incorporating AR and by leveraging WOM?

This research utilizes the methodology of Partial Least Squares Structural Equation Modeling (PLS-SEM), in order to thoroughly examine and analyze the complex interaction between inspiration, utilitarian benefits, hedonic benefits, perceived augmented quality, and attitude towards the app in influencing WOM. This study seeks to reveal the complex mechanisms driving effective and successful marketing strategies in this modern era, offering valuable insights that will equip businesses to develop more customized, impactful, and engaging marketing campaigns and applications. Through this investigation, brands can reshape the manner in which they connect with consumers in an era characterized by dynamic marketing evolution.

The present dissertation is divided into five chapters besides this introduction. In the first chapter, a literature review is conducted on the concepts under study namely Augmented Reality and Word of Mouth. The second chapter introduces the conceptual model and the hypotheses to be studied, while the third chapter presents the methodology. The fourth chapter presents the investigation's results, followed by a discussion of these findings. Finally, in the last chapter, the conclusions are drawn, the research question is answered, the limitations are discussed, and suggestions for future research are provided.

2. Literature Review

2.1 Augmented Reality

Augmented Reality (AR) is an interactive technology that integrates virtual data with the physical environment. The principle behind it is to apply virtual information created by computers in the actual environment, where these inputs may range from sound to video, to graphics, to GPS overlays, to 3D models, to text and photos and more. The real-life environment is enhanced as a result of how effectively the two types of information complement one another (Hu Tianyu et al., as quoted in Chen et al., 2019). By incorporating virtual information into the user's immediate environment as well as any indirect perception of the real-world environment, AR seeks to make the user's life easier. Building upon these definitions, Tan et al. (2022) defines Augmented Reality as a technology that overlays virtual elements onto a live image of physical environments, enabling users to envision how such virtual components might integrate into their actual surroundings.

However, it's important to differentiate Augmented Reality from Virtual Reality (VR) since some individuals struggle to distinguish between the two technologies. While AR technology enhances the perception of reality by superimposing digital items and cues atop the actual world in real-time, VR technology entirely immerses users in a synthesized world without allowing them to see the immediate environment (Carmigniani et al., 2010). So, even though both AR and VR strive to enhance the user's experience, AR adds an overlay of the viewer over the electronically created environment as opposed to VR, which electronically generates the picture of the full real-world setting.

It's important to mention as well, that as proposed by Ronal Azuma (1997), even though, for some scholars the emphasis is always on integrating virtual elements into a physical environment, it's also possible and may be useful to be able to erase portions of the actual surrounding. Besides that, Azuma also reinforces that all senses, not just sight, can be impacted by augmented reality since several researchers prefer to concentrate only on fusing real and virtual visuals and disregard all the other possibilities.

2.1.1 Augmented Reality History

Since the beginning of time, people have tried to enhance and change their surroundings. Early attempts at altering and improving their universe entailed manipulating tangible items in the

real world. However, as science and technology advanced, it became easier to produce and store new ideas, and the globe quickly ushered in the industrial and then the digital eras.

The concepts of Augmented Reality and Virtual Reality date back to the 1990s, but some consider that the idea of augmented reality was first presented by L. Frank Baum in 1901 when he published The Master Key: An Electrical Fairytale and described how someone wearing eyeglasses would have the ability to tell whether the person they were speaking to was good or evil, wise or foolish, kind or cruel since each person he encounter would have a letter indicating his or her character marked on the forehead (Sunger and Çankaya, 2019). However, actual applications and research on this technology can be found as early as the latter half of the 1950s when the cinematographer Morton Heilig envisioned that by effectively utilizing all of the senses, the film could immerse the audience into the action taking place onscreen. Heilig developed the Sensorama prototype, a forerunner to digital computing, that allowed the user to observe 3D stereo images that were augmented by vibrations, wind, handlebar input, stereo music, and a specific system for replicating fragrances (Furht, 2011, p.). Ivan Sutherland made another significant advancement when he built "The Sword of Damocles" the first head-mounted display that allowed users to observe images overlaid onto the real world (Sunger and Çankaya, 2019). However, Sutherland's head-mounted display was a heavy device that required to be suspended from the ceiling with a swiveling arm that helped the head move (Arena et al., 2022), and although this technology was ground-breaking at the time, it was too heavy and impractical for general utilization.

In order to create interactive experiences, numerous academics tested various hypotheses in the 1970s and 1980s on how to combine human activity with computer-generated overlays on video. However, one of the most significant breakthroughs was in 1975, when Myron Krueger built a system that permitted for the first time user interaction with virtual objects (Schmalstieg & Hollerer, 2016). But it was only in the year of 1992 that the term Augmented Reality was first used by Tom Caudell and David Mizell as a result of their research and development efforts, which was focused on discovering a more straightforward method to simplify Boeing's manufacturing and engineering process to support Boeing's employees. This work led them to develop a software that could superimpose the precise positions of where specific wires in the building process were intended to go (Rampolla & Kipper, 2013). This was a crucial advance in the direction toward utilizing AR technology in real-life situations.

In 1997 and in order to avoid confining augmented reality to certain technologies, Ronald Azuma, a pioneer in the field of augmented reality, describes augmented reality as "Any system that has the following three characteristics:

1. Combines real and virtual
2. Is interactive in real time
3. Is registered in three dimensions" (Ronald Azuma, 1997).

Before 1999, there was no AR software outside of specialized research laboratories. When Hirokazu Kato launched the ARToolKit, the first robust open-source software framework for AR that offered to developers tools and algorithms that enabled the overlaying of virtual content onto the real world, the scenario shifted (Schmalstieg & Hollerer, 2016). This release contributed to the widespread adoption and innovation of augmented reality since without the need to develop all the technology from scratch the developments work was facilitated. The ARQuake game, created by Bruce Thomas in 2000, is considered to be the first augmented reality mobile application and video game. This game was an altered edition of Quake, a 1996 release that was modified for the augmented reality setting. (Sunger and Çankaya, 2019).

Since then, augmented reality technology has evolved significantly due to the development in mobile devices, sensors, and computer vision, and as a result, the adoption of AR has skyrocketed. Besides that, the cost of developing AR has also decreased substantially. Google's Project Glass, which was an optical head-mounted display fashioned into a pair of spectacles, Wikitude, the first augmented reality browser, MARTA, an augmented reality app from Volkswagen to help workers during the production process, Microsoft's HoloLens, AR filters on the social media platform Snapchat and the popular game Pokémon Go are a few examples of innovations that were revolutionary in the last two decades.

Today, with their numerous applications, augmented reality is now quickly gaining popularity and integrating into peoples' daily lives in areas such as entertainment, education, commerce, tourism, marketing, navigation, healthcare and others. Giant technological companies that are investing heavily in augmented reality and its studies, such as Google, Microsoft and Apple, are assisting in its broad use.

2.1.2 Augmented Reality Devices

The development of Augmented Reality is only feasible due to a number of technology innovations, which may be used separately or in combination to create augmented reality. The AR devices aim to enhance the user's perception and engagement with their environment by fusing virtual computer-generated content with the actual surrounding. AR hardware is available in a variety of forms, each intended for specific applications and environments. These

range from consumer-focused apps to industrial and other professional settings. The intended usage, the required level of immersion, and the available technology influence the device selection process.

The majority of the hardware components used in AR applications consist of Internet of Things (IoT) devices, which may be categorized into Input devices, Sensors or Displays. Input devices facilitate user engagement with AR systems as it allows users to engage with digital content and manipulate the augmented environment. They may include a wide range of forms and characteristics such as motion controllers, eye tracking, touchscreen and gestures, and voice commands. The AR interface serves as an intermediary between input devices and the AR system (Arena et al., 2022). Sensors enable the identification of the user's or item precise location. This procedure is crucial for capturing and documenting the physical surroundings and its corresponding digital data. Consequently, it enables the integration of visuals from the physical realm with those from the digital realm (Arena et al., 2022). Lastly, the Displays facilitate user interaction with the AR system. The Displays category include devices such as Head-Mounted Displays, Computer screen display, wearable devices, Head-Up Displays, and Handheld displays.

Head-mounted Displays (HMD) are a wearable device that overlays the user's field of vision with both images of the actual and virtual surroundings. It can be worn on the head or as a component on a helmet to provide an immersive AR experience (Furht, 2011). HMDs provide to its users an immersive and hands-free experience, with an increased field of view and enhanced privacy since the content is only visible to the individual wearing the device. HMDs can range in size and style, and based on how they superimpose digital data onto the user's field of vision, HMDs may be categorized into two primary types: Video-See-Through and Optical-See-Through. Video-see-through systems requires the user to wear one or more cameras on their head to obtain the user's view of the real world. Then, to merge the real and the virtual, the footage captured by these cameras is blended with the visuals produced by the scene generator and the output is shown to the user on the displays. Optical-see-through systems function by positioning optical combiners in front of the user's eyes. The user can stare straight through these partly transmissive combiners to view the actual environment and additionally see virtual pictures that are reflected (Azuma, 1997). Both of these approaches have advantages and disadvantages and the choice between using one or the other depends on the specific use case and requirements of the AR application. On one hand, the augmented view in video-see-through systems is created by the computer by syncing the virtual details with the real-life view before showing it to the user, giving the user far greater control over the outcome and the timing

of the display. The optical-see-through, on the other hand, offers a more realistic and less obtrusive impression of the actual environment, but since this view cannot be delayed, the user may notice the temporal delay that the graphics and image processing injects into the system (Carmigniani et al., 2010). Some examples of HMD Video-See-Through is Microsoft HoloLens and HMD Optical-see-through is Google Glass.

Wearable AR Devices are technological devices that can be worn and are specifically intended to provide AR experiences. Some examples are AR smartwatches, AR glasses, Gloves or piece of clothing. Computer screen displays are devices that visually present digital data produced by a computer. Typically, they exhibit higher resolution and are of greater dimensions when compared to other devices. While they present limited immersion capabilities, their affordability makes them suitable for budget-friendly or for multiple users AR systems. Example of these devices are computer monitors and TVs. Head-Up Display (HUD) is a very compact and lightweight device that provides additional information by projecting virtual data onto a transparent surface. For example, this type of devices is very commonly used in vehicles to project information onto the windshield, providing information like navigation, speed, and other data (Jin, 2019).

Handheld displays are small computer devices which have a display that the user may hold in their hands. It utilizes video-see-through technology and sensors to overlay the visuals on the actual world (Furht, 2011). Currently, smartphones and Tablet PCs are the most frequently used devices because of their relative accessibility and because they are portable and lightweight devices, allowing the user to move freely.

2.1.3. Augmented Reality Today

By providing users with interactive and immersive experiences that blend the physical and virtual worlds, AR has been a rapidly evolving technology with a wide range of applications and with the continuous investment in several studies in order to improve the available software and hardware to meet the diverse needs of consumers and businesses.

AR is being actively studied by developers, academics, and organizations to enhance its intuitiveness, informativeness, and accessibility. This encompasses the process of improving AR for different types of devices, refining the technology, and enhancing the realism of the virtual elements.

AR has been used across various industries such as gaming, education, healthcare, navigation and location-based Services, architecture, retail and e-commerce, industrial and

manufacturing, tourism, entertainment, social media platforms and Marketing. Some examples of companies that have started using AR in their business are the Louvre Museum that allow customers to potentiate their guided tours by using AR to access additional information about artworks and historical context (Arena et al., 2022). The Gap Inc. clothing brand released an AR app that offers to their users the possibility to choose an item of clothing, their size, and show them how the clothing item looks on a mannequin to get an almost real experience (Nikhashemi et al., 2021). Adidas developed "For The Oceans," an AR storytelling experience where clients at the store may interact with a whale on their phones to learn more about marine pollution and how Adidas makes shoes from recycled plastic (Rauschnabel, 2022). Facebook allows their users to apply different filters to their camera images such as adding virtual elements, change specific characteristics of the body of the user and change backgrounds but also allows organizations to include AR features into their advertisements like allowing consumers to visually try on glasses (Rauschnabel, 2022). Through the use of AR, Lego extends their products virtually (Rauschnabel et al., 2020) for example by bringing physical Lego creations to life, allowing users to add special effects, animations, and virtual characters to the Lego creations. The ‘Pokémon Go’ mobile app is another example where the user can explore the real world while searching for and capturing virtual Pokémon characters that are superimposed onto the real environment. (Rauschnabel, 2019).

2.1.4 Augmented Reality in Marketing

Smart technologies, such as smartphones, smart appliances and voice assistants, are revolutionizing the corporate landscape worldwide and have become an essential component of people's consuming habits and contemporary lives (Nikhashemi et al., 2021). So, in a time characterized by swift technological progress and a continuously evolving consumer environment, the realm of marketing has also experienced an unprecedented metamorphosis. New and creative marketing strategies have replaced traditional methods, relying on the most recent and innovative technologies to attract and engage consumers. The effectiveness and engagement of technology marketing have increased as a result of widespread consumer acceptance and the continuous efforts by marketers to enhance consumer-brand interaction (Sung, 2021).

One technology that has gained traction in businesses' marketing strategies, particularly on product-focused companies that heavily rely on online sales and want to bridge the gap between the digital and physical worlds, is Augmented Reality. Despite the increasing use of

AR by organizations in their marketing strategies and the emergence of research on its advantages, there is still a lack of recognized and established definitions for AR Marketing. However, two definitions that have been published so far, both addressing on similar concepts have been proposed. Rauschnabel et al. (2019) defines AR Marketing as a strategy that combines digital items or information into the individual's perspective of the actual environment to showcase the advantages for customers in order to meet organizational objectives. It typically involves the use of other media as well. For Rauschnabel et al. (2022) AR Marketing refers to the deliberate incorporation of AR experiences, either on their own or in conjunction with other forms of media or brand-associated information, with the aim of accomplishing broader marketing objectives through the generation of value for the company, everyone involved, and society as a whole, while taking ethical considerations into account. According to these definitions, instead of being an independent or single endeavor, AR Marketing should be closely aligned with a business's entire marketing strategy. This requires a well-planned and long-term process that integrates with other strategies, underpinned by a thorough comprehension of user interaction.

AR Marketing can be used differently in the different stages of the customer journey. Rauschnabel et al. (2022) designed a model for the use of AR in the B2C context that shows a clear potential for the use of AR in 6 different phases of the customer journey: Awareness, Exploration, Planning, Purchase, Use and Loyalty. Awareness refers to the phase in which a customer becomes acquainted with and gains knowledge about a brand and its offerings. An example of the use of AR in this phase is a beverage company has a bus shelter ad with a QR code that, when scanned, triggers an AR experience, such as a virtual pouring of a drink. On the other hand, Exploration refers to when the individual actively engages and investigates a brand, its products and offerings without a clear intention to make a purchase, but rather with the aim of discovering new necessities or opportunities, for example a user scrolling on Instagram spots a post about an upcoming art exhibition at a local museum. Curious to learn more about the artists and their work, clicks on a link and is transported into a virtual gallery where he can view and interact with the artists' paintings and sculptures. This immersive experience sparks interest in attending the exhibition and exploring the art further. The Planning phase is when a customer meticulously strategizes an acquisition when he becomes conscious of the necessity to acquire a certain product or service, for example, a customer is in the market for a new bed, but it’s torn between a classic bed frame and a more modern one, to visualize how each option would fit in the room and match the decor, he uses the brand’s AR app to superimpose both bed frame styles into the bedroom. After experimenting with different

designs and colors, the customer chooses the modern bed. The Purchase phase is when a customer uses AR to buy a product. An example of the use of AR in this phase is a customer goes to the hairdresser, sits on the chair looks at the AR mirror in front of her, tries several hair styles on her and then clicks on the buy button of the style she liked the most and she's seeing herself at the moment. The action of using a product is known as the use phase and an example is when a customer is playing with action figures and uses an AR app where the historical figures are scanned, and the app brings them to life as virtual characters on the screen that interacts with the physical ones. Lastly, Loyalty pertains to the client's commitment to either becoming or remaining devoted to the brand and an example is when a customer has an issue with their new washing machine, so they use to the AR app that provides visual instructions by overlaying drawings directly in the user's line of sight (Rauschnabel et al., 2022).

However, most studies and most companies, especially in the retail industry, are focusing their strategies on the pre-purchase and purchase phases and not giving the post-purchase phase as much thought and effort. One of the more common uses for AR Marketing is Virtual try-on. Various clothing and cosmetics companies have embraced and adopted this use case, utilizing AR virtual mirrors or smartphones with an AR app to provide a highly interactive and accurate experience where the screen projects an image of the body with virtual elements like glasses, makeup, and clothing (Javornik, 2016).

Depending on the specific objectives to be achieved through its utilization, AR Marketing can utilize a variety of devices. These devices include smart devices that, for instance, can let users view a virtual product in their surroundings or obtain more digital content through the scan of an image, code, or markers. In addition, large interactive screens which can display a significant portion of the real world with virtual elements seamlessly integrated. Furthermore, virtual mirrors that, as previously mentioned, enable users to add virtual elements to their images. Finally, AR glasses are also a device that can play a crucial role in AR marketing. (Javornik, 2016). When choosing the appropriate approach for each organization and the sort of information to be shown, it is important to consider the constraints associated with the use of various devices. These gadgets may provide mobility, such as smart devices, or they can be stationary, like large interactive displays. Alternatively, they can be wearable devices, such as AR glasses (Rauschnabel, 2018).

According to Scholz et al. (2016), to create an effective AR experience, marketers have to adhere to a four-step process. First, they should identify their target and communication goals in order to establish the objectives of the campaign. These factors should subsequently influence

conclusions about the triggering of the AR and the data populating it. Lastly, marketers must determine the degree and methods by which an AR layer is included into the physical realm.

While AR Marketing is a valuable technique and strategy, it alone does not guarantee an unbeatable organizational strategy. Marketers should anticipate and be prepared to reassess and adjust their strategy to address the challenges that may arise during the implementation and utilization of AR Marketing. Given that AR relies heavily on data, a significant effort is required when developing and incorporating new touchpoints or expanding existing ones efficiently into the consumer's journey. Furthermore, the absence of user and contextual data would render AR inoperable (Rauschnabel, 2022). Nevertheless, by effectively using AR Marketing, organizations may enhance their brand image, foster stronger customer interaction and engagement, stimulate more sales, enhance post-purchase services and reduce costs (Rauschnabel et al., 2019). AR Marketing has the power to reshape the marketing environment and redefine the relationship between businesses and their customers.

2.2 Word of Mouth

Word of mouth (WOM), which has evolved as a vital term in the constantly shifting field of marketing, plays a critical role in defining the success of organizations and in influencing the behavior of customers. According to Goyette et al., 2010 as quoted by Lee et al., 2022, conventional WOM pertains to the exchange of knowledge, interpersonal interaction and conversational engagement between people. However, Berger (2014) delves into greater detail and defines WOM as informal conversations between individuals about the possession, utilization, or attributes of certain products, services, or their suppliers. It comprises different actions like simple conversations about a new product or experience for instance mentioning their computer is very fast, the sharing of material about the certain product or service such as sharing a link of a hotel, explicit suggestions like saying to others they should go to the Maat Museum or mere references such as just mentioning they purchased a new Toyota car. Therefore, we can describe WOM as informal spread of information, thoughts, and recommendations among people, most often via discussions that can take place both online and offline.

Currently, and since we live in the information and digital age, there are several forms of WOM, the key forms are oral WOM which include face-to-face interactions and word-of-mouse that includes online opinion websites and social media channels (Bartschat et al., 2022). Oral WOM approach is when individuals express their thoughts and suggestions verbally to

others. It often occurs in face-to-face discussions, in phone calls, or through casual social encounters. On the other hand, with the word-of-mouse approach, people can share their experiences and opinions about products, services, or businesses through digital forums, such as online opinion websites that include for instance TripAdvisor, Amazon, and others or through social media platforms like Instagram, Facebook, Twitter, Youtube or TikTok.

Word of mouth has emerged as a key metric for shaping consumer behavior and creating marketing plans in several industries (Lee et al., 2022). Marketing executives are particularly dedicated to generating and sustaining good WOM in order to draw in new clients and improve business performance (Sun et al., 2021). WOM has a significant impact on how consumers make decisions and existing research shows that, in addition to fostering loyalty and trust, WOM affects consumer purchase choices by raising purchase intent and willingness to pay (Sun et al., 2021). WOM not only raises awareness but also aids in the assessment of a product, service, or company's worth, reliability, and quality by customers.

Word of mouth (WOM) does not exist in isolation, it is impacted by several factors, leading numerous scholars to dedicate their efforts to understanding the drivers and barriers of WOM. Previous studies have discovered several elements that influence WOM communication. Some significant drivers include individual experiences, trust, contentment, connection, product or service characteristics such as perceived quality and perceived value, as well as brand loyalty (Sun et al., 2021). Roy et al. (2016) demonstrated that brand love has a direct and positive correlation with WOM. Their research findings also emphasize that the mere existence of sincerity and excitement are insufficient to generate positive WOM. The study ultimately establishes that cultivating a love-like sentiment towards the brand contributes to fostering a positive word of mouth (WOM).

Nevertheless, there is a limited availability of studies that has investigated the significance of inspiration, utilitarian benefits, hedonic benefits, perceived augmented quality, and attitude towards the app in promoting positive WOM. Evaluating these factors, specially related with Augmented Reality, is crucial for designing marketing strategies that respond to the evolving needs of society.

2.2.1. Inspiration as a Driver of WOM

Although the idea of inspiration has long captured attention in a variety of academic areas, such as religion, arts, management, engineering and education to justify how individuals sometimes

surpass the ordinary and strive for the unusual, it was only more recently that the notion started to undergo comprehensive empirical research (Oleynick et al., 2014). While individuals may easily recognize their own sense of inspiration, it is sometimes difficult to articulate or explain the exact nature of inspiration or the factors that sparked it (Rauschnabel et al., 2019). According to Oleynick et al. (2014), inspiration is a psychological emotion that drives people to actualize the potential of their ideas. Whereas for Bottger et al. (2017), inspiration is an inherent condition of motivation that is defined by a powerful cognitive element. Moreover, Arghashi et al. (2022) defends that humans exhibit an inherent motivation that is manifested via actions and that can be influenced by curiosity, the exploration of different perspectives, and the pursuit of ideal experiences. Furthermore, it suggests that inspiration serves as a catalyst for users' creativity, enabling them to generate innovative and unforeseen ideas.

Crucially, previous research, namely a study conducted by Rauschnabel et al. (2019) has already proved that perceived augmented quality drives inspiration, however prior studies have not investigated if greater levels of customer inspiration subsequently impact word of mouth behavior. Additionally, another research also showed that inspiration has a positive impact on users' ongoing desire to utilize the augmented reality (AR) application (Arghashi et al., 2022). According to the transmission model of inspiration, inspiration behaves as an intermediary connecting a person's experiences and their forthcoming attitudes and actions (Thrash et al., 2010). For this reason, it’s plausible to propose that inspiration can significantly influence Word of Mouth. Since inspired individuals are often prompted to take action, it is plausible that if their inspiration is derived from an interaction with a product, service or brand, they may become enthusiastic advocates who are eager to share their transformative experiences and recommendations with others. This, in turn, can catalyze the dissemination of their inspiration and its potential to influence the attitudes and behaviors of a broader audience.

Gaining a comprehensive understanding of the dynamics of inspiration as a driver of WOM is not just pertinent but imperative for businesses aiming to leverage their marketing strategies as inspiration can stand out as a powerful force that drives positive word of mouth. For Böttger et al. (2017), inspiration is an evolving and prospective concept in the field of marketing research. In addition to this, and in line with what was presented before on the growing significance of AR in marketing strategies and the established correlation between augmented quality and inspiration, we propose the following hypothesis:

H1. Inspiration has a positive effect on WOM.

2.2.2. Utilitarian Benefits in AR Marketing as a driver of WOM

Utilitarian benefits have evolved into a foundational concept within the realm of consumer behavior and other related fields over time. Numerous studies have proposed definitions for this concept and have explored its multifaceted impact across various domains. According to Morgan & Townsed (2022), utilitarian benefits arise from self-expressions driven by cognition, with the aim of satisfying a customer's aspirations to establish and preserve their self-identity. This definition is further complemented by Hilken et al. (2017), who assert that the utilitarian benefits reflect the efficiency and effectiveness in terms of performance. Expanding on this perspective, Chitturi et al. (2008) contend that utilitarian benefits encompass the functional, instrumental, and pragmatic advantages inherent in consumer offerings. In summary, utilitarian benefits refer to the primary advantage that may be derived from the items (Akel & Armağan, 2021).

Numerous research studies have been conducted to investigate the influence of utilitarian benefits in different contexts and circumstances. According to a widely accepted theory, AR enhances utilitarian benefits by seamlessly integrating real-world environments with virtual components, thereby leveraging its technological features and performance (Vieira et al, 2022). Comprehending the impact of utilitarian benefits in the context of AR holds paramount significance for both businesses and researchers This significance arises from the fact that AR applications extend beyond entertainment and have proven to be practically valuable in diverse domains, including education, healthcare, architecture, and marketing. Prior research has demonstrated that utilitarian benefits influence customer’s attitudes toward the app (Rauschnabel et al, 2019), purchase intentions (Hilken et al.,2017) and overall attitude and satisfaction levels (Vieira et al, 2022).

There is a deficit of published studies concerning the effect of utilitarian benefits on WOM. Currently there is insufficient empirical evidence to definitively establish a positive correlation between utilitarian benefits and WOM in the context of AR apps. Hilken et al. (2017) presented findings indicating that spatial presence, followed by utilitarian value, may exert an influence on WOM and purchase intentions. Zhu & Lin (2019) also discovered that when consumers are provided with a utilitarian reward, they exhibit an increased propensity to make recommendations. For this reason, it’s plausible to propose that utilitarian benefits can exert a substantial influence on WOM, since the utilitarian benefits frequently lead to satisfied and enthusiastic users who are inclined to share their favorable experiences and make

recommendations to others. In light of this, it is crucial to assess if utilitarian benefits have a favorable impact on WOM in the context of AR apps. Thus, we establish the following hypothesis:

H2: Utilitarian Benefits has a positive effect on WOM.

2.2.3. Hedonic Benefits in AR Marketing as a driver of WOM

Over the years, numerous studies have aimed to delineate the concept of Hedonic Benefits. According to Tamilmani et al. (2019), hedonic benefits encompass the enjoyment and pleasure that individuals gain from utilizing technology. Poncin & Mimoun (2014) extend this definition by emphasizing that hedonic value relates to the fun and amusement experienced in an activity as opposed to its outcomes or external effects. Further enhancing this perspective, Morgan & Townsed (2022) assert that hedonic benefits include the satisfaction, amusement, or delight derived from self-expression when consuming, leading to good emotional experiences. To summarize, hedonic benefits encapsulate the sensory enjoyment from a service encounter (Hilken et al., 2017) which in other words mean that these benefits are closely associated with the emotional components of consumption and include the pleasure, enjoyment, and fun that individuals get from an experience.

Several studies have been undertaken to investigate the influence of hedonic benefits across various contexts and variables. One of the prominent theories proposes that AR apps have the capacity to generate hedonic benefits by enhancing the overall user experience and enjoyment. In this context, users obtain pleasure from their engagement with the product, service or brand, which in turn augments their behavioral intention (Vieira et al., 2022). Previous research also has shown that hedonic benefits drive inspiration as well as influence customer's attitudes toward the app (Rauschnabel et al, 2019) and influences purchase intentions (Hilken et al.,2017).

Even though there are some published studies about the impact of hedonic benefits on WOM, there is still not enough data that proves in the context of AR applications that hedonic benefits positively influence WOM. Hilken et al. (2017) established that spatial presence, followed by hedonic value can influence WOM and purchase intentions, whereas Jones et al. (2006) discovered that the hedonic benefits of a shopping excursion was positively correlated with the desire to engage in word of mouth communication and Babin et al. (2005) studied the hedonic value of a dining experience and the positive influence of this value on consumer

satisfaction and WOM recommendation. In light of this, we find it imperative to evaluate whether, within the context of AR applications, hedonic benefits exert a positive influence on WOM. Accordingly, we formulate the following hypothesis:

H3: Hedonic Benefits has a positive effect on WOM.

2.2.4. Perceived Augmented Quality as a driver of WOM

In the domain of marketing and consumer behavior, particularly in the context of the utilization of AR, perceived augmented quality is a concept that holds significant importance. Nonetheless, there is a scarcity of papers that distinctly focus on this pivotal concept or propose a formal definition for it while pre-existing theoretical models may inadvertently overlook potentially significant variables, including the augmented quality within the context of AR (Rauschnabel et al., 2019). According to Poushneh (2018), augmented quality refers to the level of output quality of a consumer's experience that is acquired through their engagement with AR. Poushneh (2018) also mentions that since AR produces customized output and enhances the real environment by overlaying virtual data onto the actual world, the augmented quality plays a crucial role in shaping a pleasant user experience. Rauschnabel et al. (2019) further enhances this perspective by asserting that the extent to which consumers perceive augmented quality is contingent upon the realism they attribute to the augmented data. In light of this, we can defend that augmented quality is a subjective assessment conducted by consumers concerning the degree to which a product or service exceeds their expectations. Nonetheless, it is imperative to acknowledge that perceived augmented quality is not exclusively contingent on the objective attributes of a product or service but is intricately linked to the individual's perception and experience context.

As previously mentioned, the existing body of research on the impact of augmented quality is limited. Nevertheless, some of these studies have reached noteworthy findings. Rauschnabel et al. (2019) discovered that perceived augmented quality influences inspiration, while according to Poushneh (2018), augmented quality stands as a primary cause of consumer satisfaction. Poushneh (2018) asserts that the quality of augmentation is plays an integral role in shaping a satisfactory experience for the user. Additionally, Jung et al. (2015) demonstrated that satisfied customers are more inclined to engage in positive word of mouth about the product or service and the AR application. Drawing upon the research insights of Jung et al. (2015), and taking into account the correlation between consumers' perception of augmented quality, satisfaction, and authenticity (Rauschnabel et al., 2019), it's plausible to propose that perceive

augmented quality can influence word of mouth behavior, as consumers may feel inclined to share their positive experiences with others. Therefore, we formulate the following hypothesis:

H4: Perceived Augmented Quality has a positive effect on WOM.

2.2.5. Attitude Towards the App as a driver of WOM

In the contemporary digital landscape, where millions of apps compete for users' engagement, an app's success often depends not only on its functionality but also on the attitudes users maintain toward it. Attitude Towards the App assumes a pivotal role in determining its popularity.

Despite the absence of a formally proposed definition in recent scholarship, this concept can be constructed by drawing upon prior research. According to Baek (2013) attitudes encompass cognitive responses to a given event and are presumed to represent inclinations to react positively or negatively contingent upon the contextual conditions. Attitudes are indicators of the level of commitment individuals are prepared to invest, or the extent of labor they intend to expend in order to engage in the particular behavior. In accordance with the findings of Foroudi et al (2021), a customer's attitude towards an organization refers to the perception that the customer has in their mind about the organization. The disposition and attitude towards innovation has a crucial role in shaping the acceptance of the various digital technologies, including websites, smartphone app, and specially augmented reality technology (Arghashi et al., 2022). Subsequently, it is tenable to assert that the concept of attitude towards the app pertains to the manner in which an individual user or a collective of users perceives and emotionally responds to a particular mobile application. This encompasses the aggregate of their general sentiments, opinions, and convictions with respect to the app. Several factors have the potential to impact this attitude, encompassing the user's prior experiences with the application, the design and functionality of the app, its alignment with the user's requirements, and any preceding interactions or expectations.

Existing literature suggests that positive attitudes towards the app lead to an increase of the purchase intention (Baek, 2013), which in turn leads to an increase of frequency of purchases and greater brand loyalty (McLeana et al., 2020). Rauschnabel et al. (2019) found that the attitude towards the app is affected by utilitarian and hedonic benefits. Additionally, utilizing an AR app has a favorable impact on the consumer's attitude towards the organization.

Previous research has also shown that engaged consumers have a more favorable attitude towards the content, features, goods, and services compared to others (Arghashi et al., 2022).

While substantial research on the influence of attitude towards the app on WOM remains limited, Roy et al.'s (2016) investigation has suggested that brand personality exerts a positive effect on attitude toward the brand, potentially resulting brand recommendations to others. A more substantial contribution to this field is evident in the work of Verkijika and Wet (2019), who have demonstrated that a favorable attitude towards a platform and a positive consumer satisfaction, serves as a catalyst for user to disseminate positive word of mouth about the technology. Satisfied customers often manifest a favorable disposition about a product or service, thereby encouraging regular engagement and favorable WOM propagation. In light of this, we consider it is crucial to deepen the theories defended in existing but poorly developed studies and evaluate whether, the attitude towards and AR app has a positive influence on WOM. This prompted us to posit the following hypothesis:

H5: Attitude Toward the APP has a positive effect on WOM.

Moreover, existing literature has been interested in studying the impact of utilitarian benefits, hedonic benefits, inspiration and augmented quality on the attitude towards the app. Particularly, on the study carried out by Rauschnabel, et al. (2019) it was demonstrated that the attitude towards the app can be influenced by utilitarian benefits and hedonic benefits. Even though, the study found that the correlation between perceived augmented quality and attitude towards the app was positive but not significant and that inspiration did not significantly influenced attitude towards the app, we believe it's important to consider that the attitude towards the app may have a mediating role between these constructs and WOM. Therefore, we propose the following mediating hypotheses:

H6a: Attitude towards the app mediates the relation between inspiration and WOM.

H6b: Attitude towards the app mediates the relation between utilitarian benefits and WOM.

H6c: Attitude towards the app mediates the relation between hedonic benefits and WOM.

H6d: Attitude towards the app mediates the relation between perceived augmented quality and WOM.

3. Conceptual Model and Hypotheses

As described during the Literature Review, with this study we intend to evaluate the influence of Utilitarian Benefits, Inspiration, Hedonic Benefits, Perceived Augmented Quality and the Attitude Toward the App on the Word of Mouth and for that we will be following the hypotheses presented before:

H1: Inspiration has a positive effect on WOM.

H2: Utilitarian Benefits has a positive effect on WOM.

H3: Hedonic Benefits has a positive effect on WOM.

H4: Perceived Augmented Quality has a positive effect on WOM.

H5: Attitude Toward the APP has a positive effect on WOM.

H6a: Attitude towards the app mediates the relation between inspiration and WOM.

H6b: Attitude towards the app mediates the relation between utilitarian benefits and WOM.

H6c: Attitude towards the app mediates the relation between hedonic benefits and WOM.

H6d: Attitude towards the app mediates the relation between perceived augmented quality and WOM.

The conceptual model developed based on the hypotheses H1, H2, H3, H4, H5, H6a, H6b, H6c and H6d, that this study proposes is shown in Figure 3.1

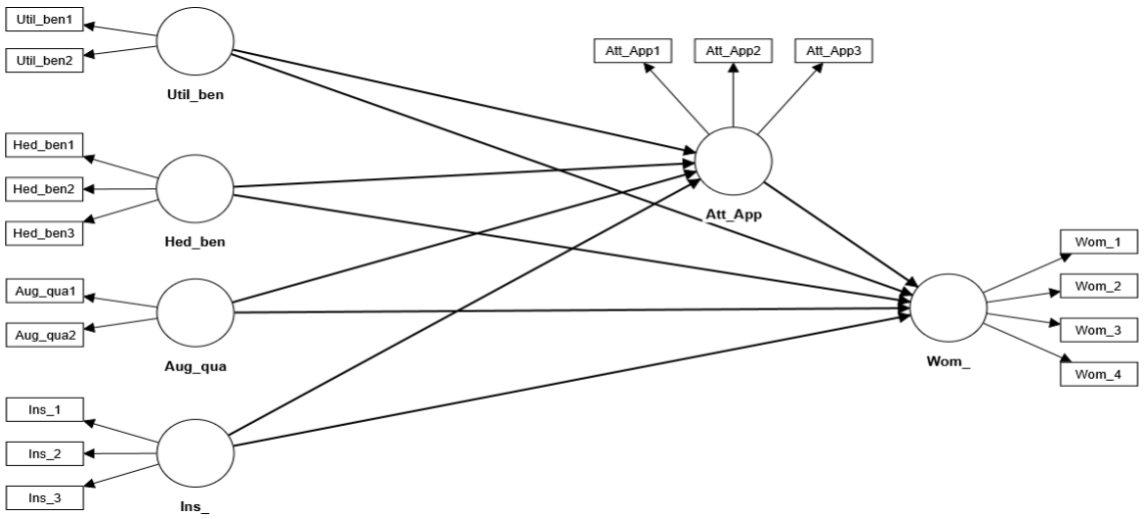

Figure 3.1 – Conceptual Model

4. Methodology

After establishing the research questions, the hypothesis, and main objectives of the study, it was necessary to develop the appropriate methodology to carry out the research. In order to further expand upon the topic of study, it was imperative to consider the desired perspective aimed to acquire on the world, whether it should be a more realistic or interpretive one. In the context of the present study, after assessing the usefulness of conducting qualitative or quantitative research, it was concluded that the most relevant and enriching would be a quantitative approach.

Given the current study, it became pertinent to conduct a research that allowed to validate the previously stated hypotheses that there is a link between Utilitarian Benefits, Inspiration, Hedonic Benefits, Perceived Augmented Quality, Attitude Toward the App and Word of Mouth, in order to acquire statistical findings that support or not the established assumptions. For this reason, the questionnaire was selected as the approach to be employed for data collection. This approach is primarily beneficial when research proceeds via acquiring information about a population, the findings may be large-scale and examined statistically, which facilitates the analysis and creation of connections between various concepts or variables. The utilization of questionnaires in studies has some advantages in terms of achieving representativeness and facilitating statistical analysis. However, it also presents drawbacks such as depersonalization of the results and the inability to explore additional pertinent elements since the questionnaire is static.

The questionnaire was developed using the Google Forms platform and had a pilot-test sent to a sample of 7 individuals. The participants were instructed to provide feedback and identify any elements in the questionnaire that they saw as unclear or ambiguous. The inputs obtained from this trial were used to make adjustments to the questionnaire. The final questionnaire was then shared over popular social networking platforms like WhatsApp, Instagram, and Facebook. The duration of its availability spanned a period of 12 days. The questionnaire developed had the pre-defined requirement that all questions must be answered, avoiding having unanswered questions or incomplete questionnaires, so no responses had to be eliminated and was translated into Portuguese to mitigate any misunderstandings and misinterpretations of questions by participants arising from linguistic hurdles.

The questionnaire's targeted a diverse demographic without any limitations based on gender, age, employment status, or technological proficiency, with the aim of capturing the perspectives from everyone since the hypotheses to be tested apply to anyone. At the beginning

of the questionnaire, a section containing personal demographic questions was inserted, related to the participant's age, gender, level of education, income and employment status which were followed by questions about their habits on using technology means like computer and smartphone and their habits regarding online shopping. The second section of the questionnaire began with the display of a short video showcasing Amazon's augmented reality functionality inside their application. This functionality encourages consumers to engage in a captivating and interactive shopping experience that allows them to make a more informed buying decision by virtually placing products (furniture, household appliances, etc) onto their real-world environment. Subsequently, the participants were presented with questions related with the chosen measures being investigated by the structural model. The questionnaire administered to the participants is included in the Attachments.

4.1 Variables/Measures

In order to study the created structural model, we used the 7-point Likert Scale, ranging from "Completely Disagree" to "Completely Agree", to measure the six constructs: Utilitarian Benefits, Hedonic Benefits, Perceived Augmented Quality, Inspiration, Attitude Toward the App and Word of Mouth (WOM). These measures were adapted to refer to the video that the participants were presented that showed the use of the AR feature on the Amazon app.

4.1.1 Utilitarian Benefits

The questions designed to assess the Utilitarian Benefits were derived from prior research conducted by Rauschnabel et al. (2019) who in turn adapted the questions from Rauschnabel (2018) and Venkatesh et al. (2012).

4.1.2 Hedonic Benefits

In order to study the Hedonic Benefits, we used items based on the investigation carried out by Rauschnabel et al. (2019) that had been developed based on the studies conducted by Venkatesh et al., 2012.

4.1.3 Perceived Augmented Quality

The measurement of the Perceived Augmented Quality was conducted using items devised from the study undertaken by Rauschnabel et al. (2019) based on the research done by Hilken et al. (2017), Javornik. (2016) and Vorderer et al. (2004). For the purposes of this study, since the respondents didn't have access to actually test the app and only saw a video explaining its functionalities, the scale was adapted, and the measuring items were reduced to two.

4.1.4 Inspiration

Inspiration was measured using Rauschnabel et al. (2019) scale that was adopted from Böttger et al. (2017) and Thrash et al. (2017).

4.1.5 Attitude Towards the APP

The items used to measure the Attitude Towards the App were derived from the research carried out by Rauschnabel et al. (2019) which was drawn from the research published by Jahn and Kunz (2012) and Yang and Zhou (2011).

4.1.6 WOM

The measurement of the WOM was carried out by utilizing the items derived from the research completed by Roy et al. (2016) that adapted the measures used by the Gremler and Gwinner (2000) on their study.

4.2 Sample characteristics

The sample comprises of 324 respondents that consists predominantly of female participants, with 62.7% (203) identifying as such. Of the remaining participants, 37% (120) are male, and 0.3% (1) identified as Other. In order to facilitate the study of the sociodemographic indicator "age" with the variables, age intervals were created. The division of age groups was carried out to establish groups in which their participants shared similar life situations and were plausible for internal variance analysis. The sample is, for the most part, composed of individuals with

higher education backgrounds, namely, bachelor's, master's, or doctoral degrees, accounting for a total of 71.6% (232). This can be interpreted as societies increasingly value and are characterized by a growing number of highly educated and specialized members. It is also relevant to mention that 21.3% of the sample (69) have completed secondary education. The sample is comprised of a variety of occupational situations ranging from students to retirees and the unemployed; however, the majority, 69.4%, are full-time workers (225). Since the sample is quite diverse, the gross monthly income of the participants is also quite varied. The sample includes participants who do not receive the minimum wage, 17.6% (57), and participants who earn more than 2500€ per month, 20.7% (67), which is higher than the average salary in Portugal in 2023.

Regarding technology usage habits, the majority of the sample spends between 4 to 12 hours per day on their mobile phones and computers, 69.1% (224). The sample is, for the most part, composed of participants who habitually engage in online shopping. The majority shop online at least once a month, 57.7% (187), and 90.7% (294) do so at least once a year. Nevertheless, it is noteworthy to mention that 9.3% (30) do not have the habit of making online purchases, this may be attributed to several factors, such as a preference for shopping in physical stores, or concerns about online security. However, due to the limitations of the questionnaire, it is not possible to get more information about these reasons.

Table 4.1 – Respondents' demographic information

	Categories	Frequency	Percentage (Out of 324)
Gender	Female	203	62,7
	Male	120	37
	Other	1	0,3
Age	Less than 18	7	2,2
	18 – 24	70	21,6
	25 - 34	70	21,6
	35 - 44	28	8,6
	45 - 54	79	24,4
	55 - 65	56	17,3
	More than 65	14	4,3
Education Level	9th Grade	18	5,6

	12th Grade	69	21,3
	Bachelor's degree	149	46,0
	Master's Degree	80	24,7
	Doctorate	3	0,9
	Other	5	1,5
Occupation	Student	46	14,2
	Full-time worker	225	69,4
	Part-time worker	15	4,6
	Self-employed	21	6,5
	Unemployed	9	2,8
	Retired	8	2,5
Income	Less than 760 €	57	17,6
	761€ - 1000€	49	15,1
	1001€ - 1550€	81	25,0
	1551€ - 2000€	45	13,9
	2001€ - 2500€	25	7,7
	More than 2500€	67	20,7
How much time do you spent	0 Hours	1	0,3
on the computer or phone?	1 – 3 Hours	78	24,1
	4 – 8 Hours	118	36,4
	8 – 12 Hours	106	32,7
	More than 12 Hours	21	6,5
How often do you shop online?	I don't shop online	30	9,3
	At least once a week	33	10,2
	Once every fortnight	35	10,8
	Once a month	119	36,7
	Once every 6 months	82	25,3
	Once a year	25	7,7

5. Results

In order to evaluate our conceptual model, we employed the Partial least squares structural equation modeling method (PLS-SEM), which is a contemporary methodology that simultaneously studies several variables and that has been shown to accurately predict cause-effect connection models that are based on recognized theories. The data was analyzed and interpreted using a three-stage process. Initially, we investigated the reliability and validity of the measurement model. Subsequently, we studied the demographic data obtained from the sample. Finally, we evaluated the structural model.

5.1 Model Quality

For the purpose of evaluating the quality of the measurement model, we conducted an analysis of the individual indicator reliability, convergent validity, internal consistency reliability, and discriminant validity (Hair et al., 2017).

When analyzing the indicator reliability, certain authors such as Hair et al. (2017) defend that factor loadings should exceed 0.6 whereas others like Ringle et al. (2023) advocate that the factor loadings should be greater than 0.7 in order to ensure stronger indicator reliability. However, our findings revealed that the standardized factor loadings had the lowest value of 0.855, clearly exceeding both minimum values suggested. Since all constructs have a p value of 0.000, all of them exhibited statistical significance at a level of $p < 0.001$, which presented empirical support for individual indicator reliability.

Table 5.1 - Composite reliability and average variance extracted

	Cronbach's alpha (α)	Composite reliability (rho_c)	Average variance extracted (AVE)
Att_App	0.941	0.962	0.894
Aug_qua	0.860	0.934	0.877
Hed_ben	0.883	0.927	0.809
Ins_	0.905	0.941	0.841
Util_ben	0.886	0.946	0.898
Wom_	0.942	0.959	0.853

As the Cronbach's alpha is higher than 0.7 and lower than 0.95 (Ringle et al., 2023), having as minimum and maximum values of 0.860 and 0.942 respectively, and the Composite Reliability (rho_c) is higher than the 0.7 threshold for all constructs (Hair et al., 2017) with the minimum value of 0.927, we can confidently conclude that the constructs have a very high internal consistency reliability which indicates the constructs are measuring the same underlying characteristic in a very consistent and reliable manner. The Average Variance Extracted (AVE) exceeds the minimal threshold of 0.5 (Hair et al., 2017) for all constructs, with a value higher than 0.8, suggesting that the items on the scale are effectively measuring the same underlying characteristic, indicating acceptable and high levels of convergent validity.

Table 5.2 - Discriminant validity checks

	Att_App	Aug_qua	Hed_ben	Ins_	Util_ben	Wom_
Att_App	**0.946**	0.712	0.646	0.818	0792	0.8
Aug_qua	0.642	**0.936**	0.685	0.735	0.763	0.706
Hed_ben	0.601	0.608	**0.899**	0.637	0.669	0.596
Ins_	0.757	0.649	0.574	**0.917**	0.649	0.773
Util_ben	0.725	0.668	0.609	0.583	**0.948**	0.711
Wom_	0.755	0.636	0.555	0.715	0.65	**0.924**

Note: AVE's square roots are displayed in bold. The correlations between the constructs are located underneath the diagonal values. The HTMT ratios are located above the diagonal values.

In order to analyze and obtain empirical evidence of discriminant validity, we used two approaches. Initially, we analyzed the HTMT, which, according to several authors such as Hair et al. (2017) or Benitez et al. (2020), should be below 0.85 (conservative threshold). This criterion was fulfilled as all HTMT values were below 0.85 (values above the diagonal in the table). The second method used was the analysis of the square root of AVE for each of the constructs (diagonal of the table) according to the Fornell and Larcker criterion. This criterion requires that the square root of the AVE of a construct be greater than its highest correlation with any other construct (Fornell & Larcker, 1981). With this analysis, we can corroborate evidence of discriminatory validity.

Prior to assessing the structural model, we conducted an analysis of collinearity by examining the Variance Inflation Factor (VIF) where we observed that the majority of the VIF

values are below the threshold value of 5, indicating a low correlation (Hair et al., 2017). However, Att_App2, WOM_3 and WOM_4 have VIF values greater than 5, 5.241, 5.997 and 5.677 respectively. These values are just slightly above 5 and below 10, therefore, we may accept them as they suggest a moderate correlation (James et al. 2013). Then, we analyzed the R-squared for the endogenous variable, WOM, which had a value of 0.644. Since this value is between 0.5 and 0.99, as stated by Ozili (2022), this is acceptable. In order to evaluate the model's validity and relevance, we used Stone-Geisser's Q^2, that suggested that the model has practical relevance and predictive power, since the value of WOM, is higher than 0 (0.324) (Hair et al., 2017).

Upon completion of this analysis, it can be determined that the constructed and studied model if of high quality, as it exhibits exceptional reliability and accuracy in its predictions and assessments, with all the variables being meaningful and contributing to the understanding of the hypothesis being investigated.

5.2. Hypotheses Test

After confirming model reliability and validity, we proceeded to the analysis of the hypotheses presented in the structural model illustrated in Figure 3.1 using Structural Equation Modeling (SEM).

Table 5.3 - Structural model assessment

	Original sample (O)	Standard deviation (STDEV	T statistics	P values
Att_App ➡ Wom_	0.355	0.064	5.570	0.000
Aug_qua ➡ Wom_	0.127	0.057	2.232	0.026
Hed_ben ➡ Wom_	0.027	0.052	0.525	0.600
Ins_ ➡ Wom_	0.269	0.058	4.637	0.000
Util_ben ➡ Wom_	0.134	0.054	2.471	0.014

The results are reported in Table 5.3 which show that inspiration has a significantly positive effect on WOM ($\beta = 0.269$, $p < 0.001$), as well as utilitarian benefits that also have a

significantly positive effect on WOM (β = 0.134, p < 0.05). These results support H1 and H2, respectively. On the other hand, the results show that hedonic benefits don't have a significantly positive effect on WOM (β = 0.027, n.s), rejecting H3. Moreover, the results provide proof that perceived augmented quality has a significantly positive effect on WOM (β = 0.127, p < 0.05), and that the attitude towards the app has a significantly positive effect on WOM (β = 0.355, p < 0.001), supporting H4 and H5, respectively.

In order to assess the mediation hypotheses, we used a bootstrapping approach (Dias et al., 2020). The results presented in Table 5.4, show that the indirect effects of inspiration on WOM via the mediator of attitude towards the app are significant with (β = 0.165, p < 0.001), supporting H6a. On the other hand, the indirect effects of perceived augmented quality on WOM via the mediator of attitude towards the app and the indirect effects of hedonic benefits on WOM via the mediator of attitude towards the app are not significant with (β = 0.014, n.s) and (β = 0.028, n.s), respectively. The results reject the hypotheses H6d and H6c, respectively. Lastly, the indirect effects of utilitarian benefits on WOM via the mediator of attitude towards the app are significant with (β = 0.135, p < 0.001), supporting H6b.

Table 5. 4 - Bootstrap results for indirect effects

	Original sample (O)	Standard deviation (STDEV	T statistics	P values
Ins_ ➡ Att_App ➡ Wom_	0.165	0.038	4.311	0.000
Aug_qua ➡ Att_App ➡ Wom_	0.014	0.019	0.730	0.465
Hed_ben ➡ Att_App ➡ Wom_	0.028	0.017	1.656	0.098
Util_ben ➡ Att_App ➡ Wom_	0.135	0.030	4.476	0.000

5.3. Importance Performance and Necessary Conditions

Moreover, we studied the importance of each variable, using the Importance-Performance Map (IPM) to assess and visualize the significance of the different variables and items to our research study. The graph 5.1, obtained from the IPM, reveals valuable insights into the importance of the variables with their actual performance or satisfaction levels as perceived by the participants.

Notably, the variable inspiration (ins_) is considered moderately important and has the highest importance value compared to the other variables. The calculated importance value is 0.434, while its performance is relatively lower at 63.527, which signifies a degree of discrepancy between its perceived importance and actual performance, suggesting that there is room for improvement to better meet stakeholder expectations, aligning performance with its importance. Similarly, the variable attitude towards the app (att_app) holds a moderate level of importance (0.355) and its performance is rated as relatively good at 74.229, demonstrating that there is still potential for further enhancements to ensure it consistently meets or exceeds participants expectations. On the other hand, the variable utilitarian benefits (util_ben) although viewed as less important (0.269) compared to the other variables, demonstrates a strong performance at 80.526. This indicates that the performance significantly exceeds its perceived importance, which is a positive sign for stakeholder satisfaction. Lastly, the variable perceived augmented quality (aug_qua) is perceived as the least important (0.141), but its performance is relatively close to the performance level, being at 69.909. Despite its lower importance, maintaining good performance in this attribute can contribute to the overall positive perception among stakeholders. Since the hypothesis regarding the impact of hedonic benefits in WOM was rejected, hed_ben was not assessed. In summary, these IPM values provide valuable insights into the alignment between perceived importance and actual performance of the attributes. They suggest opportunities for improvement in inspiration and attitude towards the app to better meet stakeholder expectations. At the same time, maintaining or enhancing the high performance of utilitarian benefits and the relatively good performance of augmented quality can contribute to overall stakeholder satisfaction and positive perceptions.

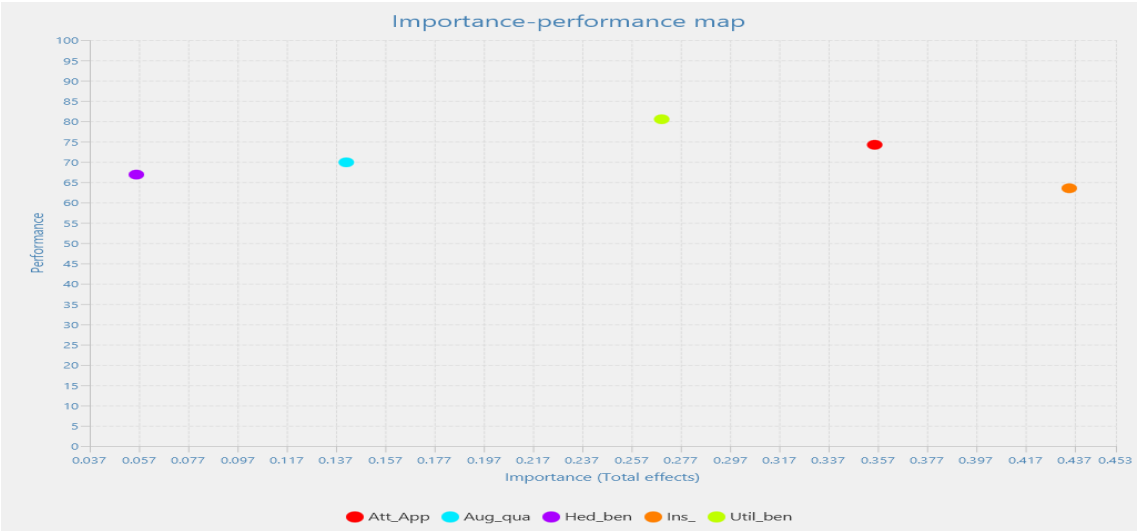

Figure 5.1 – Importance-performance Map per Construct

Additionally, through the visualization of figure 5.2, we also studied the importance of the items composing each variable since it facilitates a comprehensive understanding of how certain items influence the overall outcomes of the construct it is associated with and in order to help in making informed decisions based on the perceived importance and performance of these items. With this analysis, it was possible to conclude that ins_3 is considered the most important, but its performance is relatively lower. On the other hand, ins_1 and ins_2 are positioned very closely with ins_2 having slightly higher importance and performance. The clear high performance of util_ben stated previously, was confirmed by the two items that compose it, since they both have the highest performance level, however util_ben1 has a higher importance level then util_ben2. Att_app1 and att_app2 almost have the same performance level, however att_app1 has a lower importance, whereas att_app3 has a very similar importance level compared to att_app2 but a lower performance level. Lastly, aug_qua1 and aug_qua2 have the lowest importance level when compared to the other items as indicated in the aug_qua analysis, but the performance level is within the values of the other variables with aug_qua1 having a higher performance level than aug_qua2.

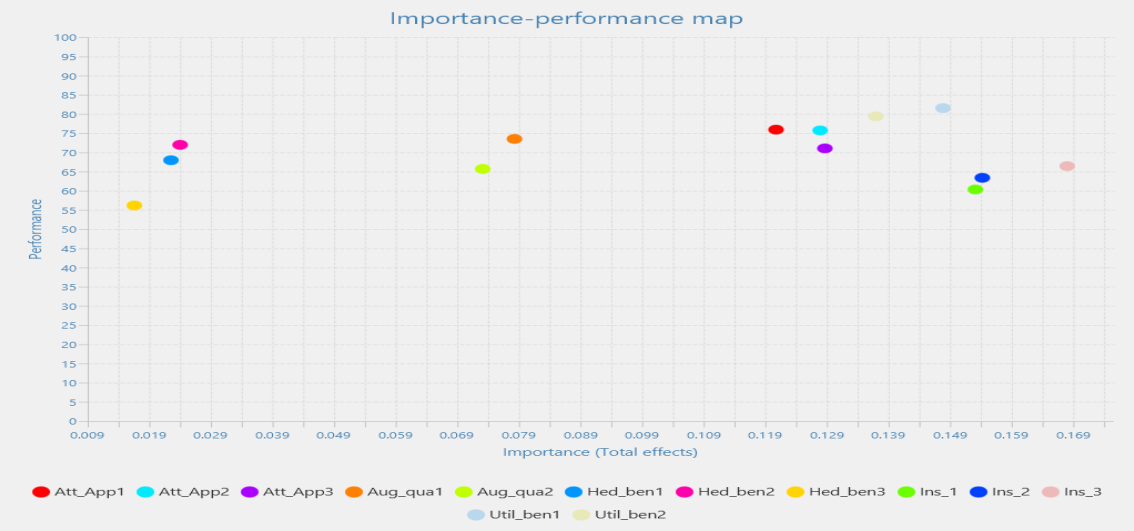

Figure 5.2 - Importance-performance Map per item

Then, we studied the necessary conditions, and as demonstrated on Table 5.5, the CR-FDH values are higher than 0.1 for all the constructs, which is the threshold suggested by Richter et al. (2020). The permutation p value, presented on Table 5.6, also confirm the statistical significance since $p < 0.001$ for all constructs. Which allows us to conclude that all constructs are necessary.

Table 5.5 – CR-FDH values

	CE-FDH	CR-FDH
LV scores - Att_App	0.387	0.302
LV scores - Aug_qua	0.136	0.156
LV scores - Hed_ben	0.145	0.130
LV scores - Ins_	0.194	0.176
LV scores - Util_ben	0.258	0.236

Table 5.6 – Permutation values

	Original effect size	95.0%	Permutation p value
LV scores - Att_App	0.387	0.081	0.000
LV scores - Aug_qua	0.136	0.060	0.000
LV scores - Hed_ben	0.145	0.055	0.000
LV scores - Ins_	0.194	0.045	0.000
LV scores - Util_ben	0.258	0.099	0.000

Furthermore, using the table 5.7, we also analyzed the practical relevance of each construct by studying what is the required value per construct for the outcome (Richter et al., 2020). With this investigation, we discovered that to for 50% of the dependent, attitude towards the app requires the highest value when compared to the others constructs, 2.604 out of 7, augmented quality, on the other hand, required the lowest value (1.481), inspiration requires a value of 1.818 and the utilitarian benefits require a value of 1.955.

Table 5.7 – Bottleneck

	Wom_	Att_App	Aug_qua	Hed_ben	Ins_	Util_ben
0 %	1.000	NN	NN	NN	NN	NN
10 %	1.600	NN	NN	NN	NN	NN
20 %	2.200	NN	NN	NN	NN	NN
30 %	2.800	1.306	NN	NN	NN	NN
40 %	3.400	1.955	NN	1.293	1.357	1.254
50 %	4.000	2.604	1.481	1.621	1.818	1.955
60 %	4.600	3.254	2.018	1.950	2.279	2.656
70 %	5.200	3.903	2.556	2.278	2.740	3.357
80 %	5.800	4.552	3.093	2.607	3.201	4.058
90 %	6.400	5.201	3.630	2.936	3.662	4.759
100 %	7.000	5.850	4.167	3.264	4.123	5.460

5.4. Discussion

In a more general sense, the aim of the study was to expand upon the existing knowledge of the WOM construct and assess the potential for enhancing word of mouth through the constructs of utilitarian benefits, hedonic benefits, inspiration, perceived augmented quality, and attitude towards the app, particularly in the context of Augmented Reality, which has increasingly emerged as a technology of paramount significance across various domains. This research provides a theoretical basis of each construct and the relationship between them and WOM and gives empirical evidence for the same.

Firstly, the results demonstrate that inspiration positively influence WOM which is consistent with the proposed hypothesis. As established by Thrash et al. (2010), inspiration serves as an intermediary, connecting a person's experiences and their upcoming dispositions and actions, which in this study, the participant who experienced feelings of inspiration while interacting with the AR app displayed a greater willingness to share their positive experiences with others. This discovery emphasizes the capacity of inspiration to generate strong emotional reactions in users, transforming them into enthusiastic brand advocates. Moreover, recent studies have demonstrated that inspiration promotes consumers' continuous desire to use the

AR app (Arghashi et al., 2022). So, inspiration may not only encourage the expression of WOM but also enhances the probability that the shared messages will be understood with excitement and loyalty, thereby contributing to the recognition of the product, service or brand in the market. These findings emphasize the importance of designing experiences that go beyond mere functionality, aiming to inspire users and, and subsequently encouraging the organic dissemination of WOM.

Secondly, the influence of utilitarian benefits on Word of Mouth is another significant finding within this study. The results indicate that participants who perceived substantial utilitarian benefits in their interactions with the app were more inclined to share their positive experiences with others. This finding contradicts previous studies that presented utilitarian benefits as a less frequent, or a more occasional topic addressed in consumer social interactions, specially when compared with hedonic benefits (Bartschat et al., 2022). According to these prior studies, utilitarian benefits would have a very limited or almost negligible influence WOM, however our study proves the opposite. This result allows us to understand the pivotal role that practical functionality plays in shaping WOM. This might be related to the fact that utilitarian benefits are associated with feelings of security, confidence, and the avoidance of suffering, that provide efficiency and effectiveness, whereas hedonic benefits are perceived more as desires instead of necessities (Kakar, 2017). Essentially, it suggests that when users perceive a concrete and practical value in an application, they are more inclined to become passionate advocates, actively promoting and endorsing the organization to their communities. The positive WOM generated by utilitarian benefits can be instrumental in fostering product or service recognition and trust, which are critical factors in today's highly competitive market landscape.

Thirdly, the results demonstrate that perceived augmented quality also has a significant effect on WOM. These findings show that participants who perceived the app as providing augmented quality experiences were notably more inclined to share their positive interactions with others, this can be linked with the study conducted by Rauschnabel et al. (2019) that proved that perceived augmented quality drives inspiration. Since from our study we could also assess that inspiration drives WOM, it’s plausible that perceived augmented quality influences WOM. Moreover, these results are also related with the ones presented by Poushneh (2018) that illuminated the fact that augmented quality plays an integral role in shaping a satisfactory experience for the user. This finding underscores the influence of enhancing user experiences with added-value features and the profound impact it can have on driving WOM. Users who perceive that an experience has augmented quality tend to become enthusiastic advocates,

actively spreading the word to others. This outcome emphasizes the significance of investing in quality enhancements, as they can be instrumental in fostering brand recognition and trust, both of which are pivotal in the contemporary competitive landscape.

Moreover, the findings indicate that the attitude towards the app has a positive influence on WOM. Participants who held a positive attitude towards the app were more inclined to engage in WOM, sharing their favorable experiences with others. Previous research has shown that customer attitude regarding a particular technology have a favorable impact on their attitudes towards the organization (Arghashi et al., 2022) which can then lead to involuntarily and authentic sharing of experiences and recommendations with others. This finding underscores the pivotal role that user perception and sentiment play in driving WOM. When individuals have a favorable attitude towards an app, they are more likely to become enthusiastic advocates, actively promoting and endorsing the product within their social circles. This highlights the crucial importance of fostering positive user experiences and cultivating a strong app-user relationship, as it can be a powerful catalyst for the organic dissemination of positive WOM, ultimately contributing to brand recognition and market success.

Lastly, and rejecting the hypothesis proposed, the results demonstrated that hedonic benefits do not significantly impact WOM. Contrary to the initial expectations, participants who experienced hedonic benefits while interacting with the app did not exhibit a noticeable tendency to share their experiences with others. This outcome challenges the common assumption that purely pleasurable or emotionally satisfying aspects of an experience automatically lead to WOM. Moreover, it also contradicts previous studies and theories that defended that individuals tend to engage more in conversations about captivating, intriguing, amusement experiences and that triggers exhilaration (Bartschat et al., 2022). However, this may be related with the fact that as proposed by Kakar (2017), despite consumers placing a higher value on hedonic features and experiences, they ultimately make a decision based on the utilitarian aspects. Our finding suggests that, in this particular context, utilitarian and inspirational elements might take precedence over hedonic aspects in motivating users to engage in WOM activities. They also underscore the complex interplay of factors that contribute to WOM and highlight the importance of a nuanced understanding of user motivations in different contexts.

Then, through the analyze of the results for the indirect effects, the research demonstrated that attitude towards the app is a mediator between inspiration and WOM and utilitarian benefits and WOM. This mediation role between inspiration and WOM underscores the importance of users' attitudes in the WOM process. However, it aligns with only half of the

conclusion drawn by Rauschnabel, et al. (2019) from their study. Their research indicated that the attitude towards the app can be influenced by utilitarian benefits and hedonic benefits, while perceived augmented quality and inspiration did not exhibit a significant correlation with attitude towards the app. Our study demonstrated that when users are inspired by the app, it positively influences their attitude towards it, making them more likely to share their positive experiences with others. This chain of influence highlights the pivotal role of emotions and user perceptions in shaping WOM behaviors. Understanding this mediating relationship can aid businesses in designing strategies that not only aim to inspire users but also focus on fostering a positive attitude towards the app, ultimately enhancing the organic dissemination of WOM. The indirect effect between utilitarian benefits and WOM highlights the significance of users' attitudes in the WOM process, particularly in the context of practical functionality. When users perceive substantial utilitarian benefits from the app, it positively influences their attitude towards it, which, in turn, amplifies their likelihood of sharing their favorable experiences with others. Recognizing this mediating relationship underscores the interplay between functionality, user perceptions, and WOM behaviors. Businesses can utilize this understanding to not only enhance the utilitarian aspects of their offerings but also actively foster a positive attitude towards the app, thereby promoting the organic propagation of WOM.

The indirect effects study also demonstrated that attitude towards the app is not a significant mediator between perceived augmented quality and WOM and between hedonic benefits and WOM. This lack of significant mediation role between attitude towards the app and WOM contrasts to our initial expectations, it appears that the influence of perceived augmented quality on WOM operates independently of users' attitudes towards the app. Users who perceive a high level of augmented quality are inclined to engage in WOM, regardless of their overall attitude towards the app. This finding underscores the direct impact of perceived quality on WOM behaviors and suggests that businesses should focus on enhancing quality and user experiences, as it can generate WOM without the need for a particularly positive attitude towards the app as an intermediary. Similarly, the study's findings revealed that attitude towards the app does not function as a mediator between hedonic benefits and WOM contrary to the initial expectations. The study suggests that hedonic benefits don’t have significant influence on WOM independently or thought the mediation of the attitudes towards the app.

Based on the study's findings, we can conclude that businesses should consider several strategic recommendations to harness the power of WOM. First and foremost, creating inspirational experiences should be a priority. Businesses should aim to evoke positive emotions, storytelling, or a sense of purpose within their user base. Encouraging users to share

these inspiring experiences can generate authentic WOM. Secondly, enhancing utilitarian benefits is key. Prioritizing practical functionality and continuously improving products or services can lead to satisfied users who are more likely to engage in WOM. Additionally, investing in perceived augmented quality is crucial. Quality enhancements that exceed user expectations contribute to WOM by fostering brand advocates. Lastly, nurturing positive attitudes towards the app is vital. Businesses should engage with users, actively seek feedback, and ensure their brand is perceived positively. By implementing these recommendations, businesses can effectively drive WOM and amplify their brand recognition and success.

6. Conclusion and Recommendations

6.1. Conclusion

In conclusion, the findings of this comprehensive study have unveiled critical insights into the intricate dynamics of Word of Mouth (WOM) within the context of emerging technologies. The objective of the research was to understand how businesses can enhance their marketing strategies, with a particular focus on optimizing WOM through the strategic integration of Augmented Reality (AR). This investigation delved into the intricate interplay of key constructs, including inspiration, utilitarian benefits, hedonic benefits, perceived augmented quality, and attitude towards the app, with the aim of providing a comprehensive understanding of how these elements collectively influence WOM within the context of AR technology.

Significantly, the research has unequivocally established that four of the constructs exert a significant influence on WOM, them being inspiration, utilitarian benefits, perceived augmented quality, and attitude towards the app. These findings highlight the multifaceted nature of WOM drivers and underscores the importance of each one of them in shaping WOM behaviors.

Specifically, we have ascertained that when users get inspired from their interactions with the app, they exhibit an increased propensity to share their positive experiences with others. This observation underscores the potent role of inspiration in evoking deeply rooted emotional responses, effectively transforming users into ardent brand advocates. Furthermore, we have found that users are more likely to engage in WOM when they perceive significant utilitarian benefits, indicating that practical functionality significantly impacts the likelihood of WOM. The perceived augmented quality of the app was also shown to be a driving force behind WOM, emphasizing the importance of consistently delivering user experiences that surpass expectations and that are efficient and of high quality. Similarly, attitude towards the app was also portrayed to have a significant role in influencing word of mouth, since individuals who have a favorable attitude towards the app are more likely to engage in WOM, expressing their good experiences with others. However, the results have demonstrated that hedonic benefits, defined by pleasurable and emotionally gratifying aspects, do not significantly influence WOM. This surprising finding suggests that, in this particular context, pure enjoyment may not be the primary catalyst for WOM, prompting further exploration into the nuances of user motivations.

Additionally, the research has also revealed that attitude towards the app serves as a mediator between inspiration and utilitarian benefits in influencing WOM, adding depth to our

understanding of the role of user attitudes in WOM. This mediation effect underscores the central role of user attitudes in mediating the impact of these constructs on WOM. However, it's important to note that attitude towards the app does not serve a mediator between perceived augmented quality and WOM and between hedonic benefits and WOM.

This study has made valuable contributions to an area and technology that has been relatively understudied and underexplored. It has underscored the practical implications for organizations, demonstrating that they can effectively leverage these constructs to enhance WOM, providing practical insights for businesses seeking to promote their products and services. Furthermore, the research has also accentuated the tremendous potential of Augmented Reality as a strategic tool for organizations. The ability of AR to mold consumer perceptions and drive positive WOM serves as a promising avenue for businesses seeking to enhance their visibility and influence in the market.

Despite the significant contributions, it's important to acknowledge the limitations of this research since similar to any other empirical study, there are some constraints that need to be taken into account. Firstly, we gather observations of real-life thoughts, rather than relying on a synthetic experimental stimulation. Therefore, the responses provided by the participants are inherently dependent on their environment and are indicative of the individual's distinct circumstances. Secondly, the sample size of 324 respondents may result in certain constraints on the outcomes since even though the sample is not exceedingly small, it still may lead to low representativeness, increased risk of biases, and more variability. Thirdly, the online questionnaire format, while convenient, presented some limitations, making it challenging to gain a deeper understanding of some of the participants' responses. Moreover, the questionnaire example of the Amazon app, limited the focus of the respondents to think more of product focused organizations which may limit the generalizability of the findings to a broader context.

With this study we were able to reach the answer to our research question: How can organizations enhance their marketing strategies by strategically incorporating AR and by leveraging WOM? Organizations can enhance their marketing strategies by strategically incorporating Augmented Reality and leveraging Word of Mouth. This enhancement can be achieved by dedicating time and efforts to understand the most effective way to evoke inspiration, enhance perceived augmented quality and offer utilitarian benefits to consumers while promote a positive attitude towards the app. These factors play crucial roles in influencing WOM. When organizations strategically integrate AR into their marketing strategies and foster positive user experiences and attitudes, they are more likely to stimulate word of mouth, thereby

generating a powerful and organic marketing force that may significantly impact their brand's reach and reputation.

In summary, this study advances not only our understanding of WOM dynamics but also unveils the untapped potential of AR technology in influencing consumer behavior and brand advocacy. It is hoped that this research and findings will not only encourage further exploration within this field but also inspire organizations to explore new avenues for enhancing their visibility, market presence and fostering positive WOM through the influential constructs unveiled in this study.

6.2. Recommendations

While this study has demonstrated significant relationships between various variables and WOM, it is essential to acknowledge that the presented case study was primarily centered around AR applied to products since the questionnaire example of the Amazon app may have limited the focus of the respondents to think more of product focused organizations. The findings of this study, grounded in relevant theoretical frameworks, suggest that similar conclusions may extend to the realm of services, such as restaurants, hair salons or hotels. However, it is prudent to emphasize the need for further exploration and validation of these hypotheses in service-oriented contexts. The intrinsic differences between products and services, including the intangibility, heterogeneity, and perishability that characterizes services, may introduce nuanced dynamics that impact WOM differently. Therefore, I recommend that future research efforts delve deeper into the specific intricacies of AR's impact on WOM in service industries. This extended research will not only expand our understanding of AR's cross-domain applicability but also offer nuanced insights that cater to the unique characteristics of the service sector, ultimately contributing to a more comprehensive body of knowledge in this field.

The examination of the Consumer Lifecycle in the context of Augmented Reality (AR) and its influence on Word of Mouth (WOM) also represents a crucial area for future research. Tracking the consumer journey through its various stages, from initial awareness to long-term loyalty, is instrumental in providing a holistic understanding of how AR impacts WOM. Each stage of the lifecycle presents distinct opportunities and challenges, and it is imperative to investigate how AR's integration at different points affects consumer perceptions, engagement, and advocacy. By conducting comprehensive research across these stages, scholars can uncover not only the immediate effects of AR on WOM but also the evolving nature of consumer

relationships with the technology. This longitudinal perspective is essential for businesses and marketers seeking to develop effective AR strategies that foster enduring consumer engagement and advocacy, ultimately contributing to sustained brand success in an increasingly digital world.

Moreover, a vital dimension of future research should involve an exploration of the more multifaceted factors that mediate the relationship between AR and WOM. Understanding the underlying mechanisms and contingencies is crucial for developing actionable insights and recommendations for businesses and practitioners. These mediating factors may encompass the role of emotional engagement, the influence of social networks, the impact of perceived novelty, and the extent of personalization in AR experiences. Investigating these mediators not only contributes to the theoretical depth of the study but also offers practical guidance for optimizing the utilization of AR to enhance WOM.

In conclusion, the study's findings and recommendations lay a robust foundation for future research in the field of AR's impact on WOM. By extending investigations into services, delving into the intricacies of the Consumer Lifecycle, and exploring mediating factors, the research community can contribute substantially to the comprehension of this dynamic intersection between technology and consumer behavior.

Bibliography

Akel, G., & Armağan, E. (2021). Hedonic and utilitarian benefits as determinants of the application continuance intention in location-based applications: The mediating role of satisfaction. *Multimedia Tools and Applications*, 80, 7103–7124. https://doi.org/10.1007/s11042-020-10094-2

Arghashi, V., & Yuksel, C. A. (2022). Interactivity, Inspiration, and Perceived Usefulness! How retailers' AR-apps improve consumer engagement through flow. *Journal of Retailing and Consumer Services*, 64, 102756. https://doi.org/10.1016/j.jretconser.2021.102756

Arena, F., Collotta, M., Pau, G., & Termine, F. (2022). An Overview of Augmented Reality. *Computers*, 11 (2), 28. https://doi.org/10.3390/computers11020028

Arena, S., Florian, E., Zennaro, I., Orrù, P. F., & Sgarbossa, F. (2022). A novel decision support system for managing predictive maintenance strategies based on machine learning approaches. *Safety Science*, 146, 105529. https://doi.org/10.1016/j.ssci.2021.105529

Azuma, R. (1997). A Survey of Augmented Reality. Presence: *Teleoperators and Virtual Environments*, 6 (4), 355–385. https://doi.org/10.1162/pres.1997.6.4.355

Babin, B. J., Lee, Y., Kim, E., & Griffin, M. (2005). Modeling Consumer Satisfaction and Word-of-Mouth: Restaurant Patronage in Korea. *Journal of Services Marketing*, 19(3), 133-139. https://doi.org/10.1108/08876040510596803

Baek, Y. (2013). Analysis of user's attitude toward apps, intention to use and continual consuming intention - Focused on mobile commerce. *International Journal of Contents*, 9(4), 35–44. https://doi.org/10.5392/ijoc.2013.9.4.035

Bartschat, M., Cziehso, G., & Hennig-Thurau, T. (2022). Searching for word of mouth in the digital age: Determinants of consumers' uses of face-to-face information, internet opinion sites, and social media. *Journal of Business Research*, 141, 393–409. https://doi.org/10.1016/j.jbusres.2021.11.035

Benitez, J., Henselerc, J., Castillo, A., & Schuberthc, F. (2020). How to perform and report an impactful analysis using partial least squares: Guidelines for confirmatory and explanatory IS research. *Information & Management*, 57 (2), 103168. https://doi.org/10.1016/j.im.2019.05.003

Berger, J. (2014). Word of mouth and interpersonal communication: A review and directions for future research. *Journal of Consumer Psychology*, 24(4), 586–607. https://doi.org/10.1016/j.jcps.2014.05.002

Borah, A., Banerjee, S., Lin, Y., Jain, A., & Eisingerich, A. B. (2019). Improvised Marketing Interventions in social media. *Journal of Marketing*, 84(2), 69–91. https://doi.org/10.1177/0022242919899383

Böttger, B., Rudolph, T., Evanschitzky, H., & Pfrang, T. (2017) Customer Inspiration: Conceptualization, Scale Development, and Validation. *Journal of Marketing*, 81(6), 116–131. https://doi.org/10.1509/jm.15.0007

Carmigniani, J., Furht, B., Anisetti, M., Ceravolo, P., Damiani, E., & Ivkovic, M. (2011). Augmented reality technologies, systems and applications. *Multimedia Tools and Applications*, 51(1), 341–377. https://doi.org/10.1007/s11042-010-0660-6

Chen, Y., Wang, Q., Chen, H., Song, X., Tang, H., & Tian, M. (2019). An overview of augmented reality technology. *Journal of Physics: Conference Series (Vol. 1237, No. 2, p. 022082).* IOP Publishing.

Chitturi, R., Raghunathan, R., & Mahajan, V. (2008). Delight by Design: The Role of Hedonic versus Utilitarian Benefits. *Journal of Marketing*, 72(3), 48–63. https://doi.org/10.1509/JMKG.72.3.048

Dacko, S. G. (2017). Enabling smart retail settings via mobile augmented reality shopping apps. *Technological Forecasting and Social Change*, 124, 243–256. https://doi.org/10.1016/j.techfore.2016.09.032

Fornell, C., & Larcker, D. F. (1981). Evaluating Structural Equation Models with Unobservable Variables and Measurement Error. *Journal of Marketing Research*, 18(1), 39. https://doi.org/10.2307/3151312

Foroudi, P., Palazzo, M., & Sultana, A. (2021). Linking brand attitude to word-of-mouth and revisit intentions in the restaurant sector. *British Food Journal*, 123(13), 221–240. https://doi.org/10.1108/bfj-11-2020-1008

Furht, B. (2011). *Handbook of Augmented Reality*. Springer New York. https://doi.org/10.1007/978-1-4614-0064-6

Gremler, D. D., & Gwinner, K. P. (2000). Customer-Employee Rapport in Service Relationships. *Journal of Service Research*, 3(1), 82–104. https://doi.org/10.1177/109467050031006

Hair, J. F., Hult, G. M., Ringle, C., & Sarstedt, M. (2017). *A primer on partial least squares structural equation modeling (PLS-SEM).* Sage Publications.

Heller, J., Chylinski, M., Ruyter, K., Mahr, D., & Keeling, D. I. (2019). Let Me Imagine That for You: Transforming the Retail Frontline Through Augmenting Customer Mental

Imagery Ability. *Journal of Retailing*, 95(2), 94–114. https://doi.org/10.1016/j.jretai.2019.03.005

Hilken, T., de Ruyter, K., Chylinski, M., Mahr, D., & Keeling, D. I. (2017). Augmenting the eye of the beholder: exploring the strategic potential of augmented reality to enhance online service experiences. *Journal of the Academy of Marketing Science*, 45, 884–905. https://doi.org/10.1007/s11747-017-0541-x

Rageh Ismail, A., & Spinelli, G. (2012). Effects of brand love, personality and image on word of mouth: The case of fashion brands among young consumers. *Journal of Fashion Marketing and Management: An International Journal, 16*(4), 386–398. https://doi.org/10.1108/13612021211265791

Jahn, B., Kunz, W. H. (2012). How to Transform Consumers into Fans of Your Brand. *Journal of Service Management*, 23(3), 344–361. https://doi.org/10.1108/09564231211248444

James, G., Witten, D., Hastie, T., & Tibshirani. R. (2013). *An Introduction to Statistical Learning: with Applications in R.* Springer New York. https://doi.org/10.1007/978-1-4614-7138-7

Javornik, A. (2014). [Poster] Classifications of augmented reality uses in marketing. In 2014 IEEE international symposium on mixed and augmented reality-media, art, social science, humanities and design (ISMAR-MASH'D) (pp. 67-68). IEEE. https://doi.org/10.1109/ISMAR-AMH.2014.6935441

Javornik, A. (2016). Augmented reality: Research agenda for studying the impact of its media characteristics on consumer behaviour. *Journal of Retailing and Consumer Services*, 30, 252–261. https://doi.org/10.1016/j.jretconser.2016.02.004

Jin, Y., Monge, J., Postolache, O., & Niu, W. (2019). Augmented Reality with Application in Physical Rehabilitation. *In 2019 International Conference on Sensing and Instrumentation in IoT Era (*ISSI) (pp. 1-6). IEEE. https://doi.org/10.1109/issi47111.2019.9043665

Jones, M. A., Reynolds, K. E., & Arnold, M. J. (2006). Hedonic and Utilitarian shopping value: investigating differential effects on retail outcomes. *Journal of Business Research*, 59(9), 974–981. https://doi.org/10.1016/j.jbusres.2006.03.006

Jung, T., Chung, N., & Leue, M. C. (2015). The determinants of recommendations to use augmented reality technologies: The case of a Korean theme park. *Tourism Management*, 49, 75–86. https://doi.org/10.1016/j.tourman.2015.02.013

Kats, E., Lazarsfeld, P. F. (1957). Personal Influence: The Part Played by People in the Flow of Mass Communications. The American Journal of Psychology, 70(1), 157. https://doi.org/10.2307/1419262

Kakar, A. K. A. (2017). Why do users prefer the hedonic but choose the Utilitarian? Investigating user dilemma of hedonic–utilitarian choice. *International Journal of Human-Computer Studies*, 108, 50–61. https://doi.org/10.1016/j.ijhcs.2017.07.003

Kesim, M., & Ozarslan, Y. (2012). Augmented Reality in Education: Current, Technologies and the Potential for Education. *Procedia - Social and Behavioral Sciences*, 47, 297–302. https://doi.org/10.1016/j.sbspro.2012.06.654

Lee, W. L., Liu, C. H., & Tseng, T. W. (2022). The multiple effects of service innovation and quality on transitional and electronic word-of-mouth in predicting customer behaviour. *Journal of Retailing and Consumer Services*, 64, 102791. https://doi.org/10.1016/j.jretconser.2021.102791

McLean, G., Osei-Frimpong, K., Al-Nabhani, K., & Marriott, H. (2020). Examining consumer attitudes towards retailers' m-commerce mobile applications – An initial adoption vs. continuous use perspective. *Journal of Business Research*, 106, 139–157. https://doi.org/10.1016/j.jbusres.2019.08.032

Morgan, C., & Townsed, C. (2022). Why the drive: The utilitarian and hedonic benefits of self-expression through consumption. *Current Opinion in Psychology*, 46, 101320. https://doi.org/10.1016/j.copsyc.2022.101320

Nikhashemi, S.R., Knight, H. H., Nusair, K., & Liat, C. B. (2021). Augmented reality in smart retailing: A (n) (A) Symmetric Approach to continuous intention to use retail brands' mobile AR apps. *Journal of Retailing and Consumer Services*, 60, 102464. https://doi.org/10.1016/j.jretconser.2021.102464

Oleynick, V. C., Thrash, T. M., Lefew, M., Moldovan, E. G. & Kieffaber, P. D. (2014). The scientific study of inspiration in the creative process: Challenges and opportunities. *Frontiers in Human Neuroscience*, 8. https://doi.org/10.3389/fnhum.2014.00436

Ozili, P. K. (2023). The acceptable R-square in empirical modelling for social science research. In Social research methodology and publishing results: A guide to non-native english speakers (pp. 134-143). IGI Global.

Poncin, I., & Mimoun, M. S. B. (2014). The impact of "e-atmospherics" on physical stores. *Journal of Retailing and Consumer Services*, 21(5), 851–859. https://doi.org/10.1016/j.jretconser.2014.02.013

Poushneh, A. (2018). Augmented reality in retail: A trade-off between user's control of access to personal information and augmentation quality. *Journal of Retailing and Consumer Services*, 41, 169–176. https://doi.org/10.1016/j.jretconser.2017.12.010

Kipper, G., & Rampolla, J. (2012). *Augmented reality: An emerging technologies guide to AR*. Elsevier Science & Technology Books.

Rauschnabel, P. A., Babin, B. J., Dieck, M. C. T., Krey, N., & Jung, T. (2022). What is Augmented Reality Marketing? Its definition, complexity, and future. *Journal of Business Research*, 142, 1140–1150. https://doi.org/10.1016/j.jbusres.2021.12.084

Rauschnabel, P. A., Felix, R., & Hinsch, C. (2019). Augmented reality marketing: How mobile AR-apps can improve brands through inspiration. *Journal of Retailing and Consumer* Services, 49, 43–53. https://doi.org/10.1016/j.jretconser.2019.03.004

Rauschnabel, P.A., & Krey, N. (2018). Virtually Enhancing the Real World with Augmented Reality Holograms: Use and Gratification Perspective: An Abstract. In *Back to the Future: Using Marketing Basics to Provide Customer Value. Proceedings of the 2017 Academy of Marketing Science (AMS) Annual Conference (pp. 623-623). Springer International Publishing.* https://doi.org/10.1007/978-3-319-66023-3_204

Ringle, C. M., Sarstedt, M., Sinkovics, N., & Sinkovics, R. R. (2023). A perspective on using partial least squares structural equation modelling in data articles. *Data in Brief*, 48, 109074. https://doi.org/10.1016/j.dib.2023.109074

Ronaghi, M. H., & Ronaghi, M. (2022). A contextualized study of the usage of the augmented reality technology in the tourism industry. *Decision Analytics Journal*, 5, 100136. https://doi.org/10.1016/j.dajour.2022.100136

Roy, P., Khandeparkar, K., & Motiani, M. (2016). A lovable personality: The effect of brand personality on brand love. *Journal of Brand Management*, 23, 97–113. https://doi.org/10.1057/s41262-016-0005-5

Schmalstieg, D., & Hollerer, T. (2016). *Augmented Reality: Principles and Practice*. Addison-Wesley Professional.

Scholz, J., & Smith, A. N. (2016). Augmented Reality: Designing Immersive Experiences That Maximize Consumer Engagement. *Business Horizons*, 59(2), 149–161. https://doi.org/10.1016/j.bushor.2015.10.003

Sun, X., Foscht, T., & Eisingerich, A. B. (2021). Does educating customers create positive word of mouth?, *Journal of Retailing and Consumer Services*, 62, 102638. https://doi.org/10.1016/j.jretconser.2021.102638

Sung, E. C. (2021). The effects of augmented reality mobile app advertising: Viral marketing via shared social experience. *Journal of Business Research*, 122, 75–87. https://doi.org/10.1016/j.jbusres.2020.08.034

Sünger, I., & Çankaya, S. (2019). Augmented Reality: Historical Development and Area of Usage. *Journal of Educational Technology and Online Learning*, 2(3), 118–133. https://doi.org/10.31681/jetol.615499

Tamilmani, K., Rana, N. P., Prakasam, N., & Dwivedi, Y. K. (2019). The battle of Brain vs. Heart: A literature review and meta-analysis of "hedonic motivation" use in UTAUT2. *International Journal of Information Management*, 46, 222–235. https://doi.org/10.1016/j.ijinfomgt.2019.01.008

Tan, Y., Chandukala,S. R., & Reddy, S. K. (2022). Augmented Reality in Retail and Its Impact on Sales. *Journal of Marketing*, 86(1), 48-66. https://doi.org/10.1177/0022242921995449

Thrash, T.M., Maruskin, L.A., Cassidy, S.E., Fryer, J.W., & Ryan, R.M. (2010). Mediating between the muse and the masses: inspiration and the actualization of creative ideas. *Journal of Personality and Social Psychology,* 98(3), 469. https://doi.org/10.1037/a0017907

Thrash, T.M., Maruskin, L.A., Moldovan, E.G., Oleynick, V.C., & Belzak, W.C. (2017). Writer-Reader Contagion of Inspiration and Related States: Conditional Process Analyses Within a Cross-Classified Writer × Reader Framework. *Journal of Personality and Social Psychology,* 113(3), 466. https://doi.org/10.1037/pspp0000094

Venkatesh, V., Thong, J. Y., & Xu, X. (2012). Consumer Acceptance and Use of Information Technology: Extending the Unified Theory of Acceptance and Use of Technology. *MIS Quarterly*, 157-178. https://doi.org/10.2307/41410412

Verkijika, S. F., & De Wet, L. (2019). Understanding word-of-mouth (WOM) intentions of mobile app users: The role of simplicity and emotions during the first interaction. *Telematics and Informatics*, 41, 218–228. https://doi.org/10.1016/j.tele.2019.05.003

Vieira, V. A., Rafael, D. N., & Agnihotri, R. (2022). Augmented reality generalizations: A meta-analytical review on consumer-related outcomes and the mediating role of hedonic and utilitarian values. *Journal of Business Research*, 151, 170-184. https://doi.org/10.1016/j.jbusres.2022.06.030

Vorderer, P., Wirth, W., Gouveia, F.R., Biocca, F., Saari, T., Jäncke, L., Böcking, S., Schramm, H., Gysbers, A., Hartmann, T., Klimmt, C., Laarni, J., Ravaja, N., Sacau, A., Baumgartner, T., & Jäncke, P. (2004). MEC Augmentation Quality Questionnaire (MECSPQ):

Short Documentation and Instructions for Application. Report to the European Community, Project Presence: MEC (IST-2001-37661).

Yang, H., & Zhou, L. (2011). Extending TPB and TAM to mobile viral marketing: An exploratory study on American young consumers' mobile viral marketing attitude, intent and behavior. *Journal of Targeting, Measurement and Analysis for Marketing*, 19, 85–98. https://doi.org/10.1057/jt.2011.11

Zhu, Y., & Lin, P. (2019). Hedonic and Utilitarian: The influences of product type and reward type on consumer referral likelihood. *Journal of Contemporary Marketing Science*, 2(2), 120-136. https://doi.org/10.1108/JCMARS-01-2019-0008

Attachments

1. Questionnaire Questions

Impacto da Realidade Aumentada nas Estratégias de Marketing das Empresas

Caro Participante,

Obrigado pelo seu tempo.
O meu nome é Beatriz Guia e este questionário, que faz parte do meu Projeto de Tese de Mestrado, tem como objetivo reunir informações sobre o impacto da Realidade Aumentada nas Estratégias de Marketing das Empresas.
As informações fornecidas serão estritamente confidenciais e serão usadas apenas para fins de pesquisa. Não há respostas certas ou erradas e encorajo-vos a ser o mais honestos possível. Os dados recolhidos serão tratados em conjunto e de forma anónima.
Obrigado antecipadamente pela sua disponibilidade, a sua colaboração é vital para esta pesquisa.

Para quaisquer perguntas, por favor, entre em contato comigo: bfgga@iscte-iul.pt (e-mail institucional) ou beatrizguia15@gmail.com (email pessoal).

Indica uma pergunta obrigatória

Dados Demográficos

. Qual a sua idade? *

Marcar apenas uma oval.

- ◯ Menos de 18 anos
- ◯ 18 - 24 anos
- ◯ 25 - 34 anos
- ◯ 35 - 44 anos
- ◯ 45 - 54 anos
- ◯ 55 - 64 anos
- ◯ Mais de 65 anos

2. Qual o seu género? *

Marcar apenas uma oval.

- ◯ Feminino
- ◯ Masculino
- ◯ Prefiro não dizer
- ◯ Outro

3. Qual é o mais alto nível de educação que completou? *

Marcar apenas uma oval.

- ◯ 9º Ano
- ◯ 12º Ano
- ◯ Licenciatura
- ◯ Mestrado
- ◯ Doutoramento
- ◯ Outro

4. O que melhor descreve a sua situação de emprego nos últimos três meses? *

Marcar apenas uma oval.

- ◯ Trabalhador a Tempo integral
- ◯ Trabalhador a Tempo parcial
- ◯ Trabalhador por conta Própria
- ◯ Desempregado
- ◯ Estudante
- ◯ Reformado
- ◯ Outro

5. Qual a faixa que melhor representa o seu rendimento mensal bruto? *

Marcar apenas uma oval.

- ◯ Menos de 760€
- ◯ 761€ - 1000€
- ◯ 1001€ - 1550€
- ◯ 1551€ - 2000€
- ◯ 2001€ - 2500€
- ◯ Mais de 2500€

6. Qual é o tempo médio que gasta por dia no telemóvel ou computador? *

Marcar apenas uma oval.

- ◯ 0 Horas
- ◯ 1 - 3 Horas
- ◯ 4 - 8 Horas
- ◯ 8 - 12 Horas
- ◯ Mais de 12 Horas

7. Com que frequência faz compras online? *

Marcar apenas uma oval.

- ◯ Pelo menos uma vez por semana
- ◯ Uma vez por quinzena
- ◯ Uma vez por mês
- ◯ Uma vez a cada 6 meses
- ◯ Uma vez por ano
- ◯ Não faço compras online

Realidade Aumentada

A Realidade Aumentada é uma tecnologia que permite sobrepor elementos virtuais à nossa visão de realidade. Esta tecnologia pode ser aplicada num vasto número de áreas desde a educação até à manutenção de máquinas por exemplo.

Imagine que pretende comprar um produto de decoração ou eletrodoméstico na Amazon e tem à sua disposição uma aplicação móvel com realidade aumentada, que lhe permite ver como o objeto ficará espaço, tal como pode ver no seguinte vídeo.

http://youtube.com/watch?v=77ZJ3jw6EkA

8. Selecione o seu nível de concordância relativamente às seguintes afirmações *

Marcar apenas uma oval por linha.

	Discordo totalmente	Discordo	Discordo um Pouco	Neutro	Concordo um Pouco	Concordo	Concordo Totalment
Esta aplicação é útil	◯	◯	◯	◯	◯	◯	◯
Esta aplicação ajuda-me a entender melhor o produto	◯	◯	◯	◯	◯	◯	◯
Esta aplicação entretém-me	◯	◯	◯	◯	◯	◯	◯
Utilizar esta aplicação é divertido	◯	◯	◯	◯	◯	◯	◯
Esta aplicação ajuda a passar o tempo	◯	◯	◯	◯	◯	◯	◯
Com esta aplicação consigo sentir como se o produto estivesse no mundo real	◯	◯	◯	◯	◯	◯	◯
Tudo o que vejo no ecrã parece real	◯	◯	◯	◯	◯	◯	◯

9. Selecione o seu nível de concordância relativamente às seguintes afirmações *

Marcar apenas uma oval por linha.

	Discordo totalmente	Discordo	Discordo um Pouco	Neutro	Concordo um Pouco	Concordo	Concordo Totalment
Esta aplicação inspirou-me de alguma forma	◯	◯	◯	◯	◯	◯	◯
Esta aplicação estimulou o meu pensamento	◯	◯	◯	◯	◯	◯	◯
Esta aplicação deu-me novas ideias e novos pontos de vista	◯	◯	◯	◯	◯	◯	◯
No geral, a aplicação é boa	◯	◯	◯	◯	◯	◯	◯
A minha atitude para com esta aplicação é positiva	◯	◯	◯	◯	◯	◯	◯
A aplicação correspondeu às minhas expectativas	◯	◯	◯	◯	◯	◯	◯

10. Selecione o seu nível de concordância relativamente às seguintes afirmações *

Marcar apenas uma oval por linha.

	Discordo totalmente	Discordo	Discordo um Pouco	Neutro	Concordo um Pouco	Concordo	Concordo Totalment
Eu sou capaz de encorajar amigos e familiares a comprar com esta aplicação	◯	◯	◯	◯	◯	◯	◯
Eu vou recomendar esta aplicação sempre que alguém me pedir conselhos	◯	◯	◯	◯	◯	◯	◯
Quando, numa conversa, o tema de fazer compras online for abordado, eu vou recomendar esta aplicação	◯	◯	◯	◯	◯	◯	◯
Eu realmente recomendo esta aplicação aos meus amigos	◯	◯	◯	◯	◯	◯	◯

2. Extra Data Analysis

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values
Att_App1 <- Att_App	0,941	0,940	0,011	83,842	0,000
Att_App2 <- Att_App	0,957	0,956	0,008	120,627	0,000
Att_App3 <- Att_App	0,940	0,939	0,010	96,860	0,000
Aug_qua1 <- Aug_qua	0,941	0,941	0,008	113,175	0,000
Aug_qua2 <- Aug_qua	0,932	0,931	0,011	85,045	0,000
Hed_ben1 <- Hed_ben	0,929	0,929	0,010	90,878	0,000
Hed_ben2 <- Hed_ben	0,912	0,912	0,010	87,454	0,000
Hed_ben3 <- Hed_ben	0,855	0,854	0,021	40,343	0,000
Ins_1 <- Ins_	0,892	0,892	0,017	53,432	0,000
Ins_2 <- Ins_	0,938	0,938	0,010	97,086	0,000
Ins_3 <- Ins_	0,920	0,920	0,010	94,271	0,000
Util_ben1 <- Util_ben	0,952	0,951	0,008	120,704	0,000
Util_ben2 <- Util_ben	0,943	0,943	0,011	85,034	0,000
Wom_1 <- Wom_	0,867	0,867	0,020	42,939	0,000
Wom_2 <- Wom_	0,934	0,934	0,010	88,995	0,000
Wom_3 <- Wom_	0,945	0,945	0,007	132,607	0,000
Wom_4 <- Wom_	0,945	0,945	0,008	126,015	0,000

	R-square
Att_App	0,700
Wom_	0,644

	VIF
Att_App1	4,296
Att_App2	5,241
Att_App3	3,936
Aug_qua1	2,318
Aug_qua2	2,318
Hed_ben1	3,096
Hed_ben2	2,488

Hed_ben3	2,269
Ins_1	2,530
Ins_2	3,860
Ins_3	3,107
Util_ben1	2,730
Util_ben2	2,730
Wom_1	2,554
Wom_2	4,605
Wom_3	5,997
Wom_4	5,677