

Researching customer's consuming habits and purchasing VR/AR tourism in Helsinki

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Abstract

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Title of the thesis Researching customer's consuming habits and purchasing VR/AR tourism in Helsinki		
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<p>Abstract</p> <p>In the wake of the COVID-19 pandemic 2020, global organisations and enterprises have been devising novel tactics and commercial approaches to somewhat mitigate the economic downturn experienced across several sectors. The user's text is too vague and lacks context. Please provide more information or specify the tourist sector in Finland, like many others, is actively engaged in devising strategies to enhance and revitalise tourism services in response to the COVID-19 pandemic and its aftermath. The convergence of virtual reality (VR) and augmented reality (AR) technologies with the tourist sector has elicited diverse perspectives from global customers, transcending national boundaries, including Finland.</p> <p>This study aims to gain insights into the psychology and perspectives of consumers in Helsinki regarding tourism services that utilise virtual reality (VR) and augmented reality (AR) technology. Additionally, this research aims to identify the consumption habits of potential customers to facilitate the development of a favourable product image within the community and the market, as well as to enhance product offerings to align with customer preferences.</p> <p>To investigate this matter, the researcher comprehensively examined theoretical literature and supplemented it with empirical observations in Helsinki. Additionally, a survey was administered to assess consumer use of virtual reality and augmented reality technologies within the tourist sector.</p>		
<p>Keywords</p> <p>Consumption habits, tourism services, Augmented Reality, Virtual Reality</p>		

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1 Introduction

1.1 Background

One of the key pillars of the global economy is the tourist sector. It tragically suffered the most during the Covid-19 epidemic; nonetheless, it is now experiencing expansion and evolution (AR Market 2023). Virtual reality and augmented reality (VR/AR) are developing at an incredible rate and have the potential to impact various industries, including tourism, positively. These new technologies provide visitors with a much more satisfying and enjoyable experience. The global virtual and augmented reality market is anticipated to develop at a 25,7 per cent annual pace from 2017 to 2025, reaching 9,6 billion US dollars (AR Market 2023).

Tourism is acknowledged as a significant growth industry and economic driver in Finland (OECD 2020). The Finnish tourist and hospitality industry has expanded internationally and at a higher rate than other sectors in the past few years. The fact that tourism contributed 2.7% of the GDP and developed into a significant export industry in 2019 has demonstrated that (Kyyrä 2023). In Finland, there are 147 000 individuals who are officially employed for a wide range of tourism-related tasks. An estimated 35 600 people work in the tourist sector in Helsinki. (City of Helsinki 2023.)

One of the cities with the potential to grow VR/AR tourism is Helsinki. Helsinki has several museums and cultural venues that offer many opportunities for immersive VR/AR experiences. For instance, some museums have begun implementing VR/AR technology so that tourists can explore Helsinki's best museums from the warmth of their own homes (Elisabeth 2023). The advancement of cutting-edge VR/AR technology tend to be easier to access and support in Helsinki's tech-savvy setting. Helsinki has been collaborating with world-class cities like New York and London to fully utilize the potential of digitization, satisfying customer expectations by enhancing its services in various areas, including culture and tourism, to develop towards a mostly functional city (Helsinki 2023). Furthermore, the Helsinki administration prioritises environmental sustainability and zero carbon emissions in the development process since they are seen as competitive advantages and a way to set Helsinki apart from other cities (City of Helsinki 2023). Therefore, Helsinki's commitment to sustainable tourism may be compatible with VR/AR (Semlani 2028).

This study is significant because it explores the relationship between technology, economic impact, and consumer behaviour in the context of the expanding tourism industry and rising tourist demand. Consumer insights are used to better understand consumer preferences and behaviours related to VR/AR travel, enabling firms to customize their offerings to suit the demands of their target market.

1.2 Objective & Delimitation

By examining consumer behaviours and preferences, researchers can get valuable data about the level of demand for virtual reality and augmented reality tourist experiences in Helsinki (Charm et al. 2020). This encompasses comprehending the many categories of experiences customers find appealing, the frequency at which they engage in these experiences and the variables that shape their decision-making process (INFINITIA 2022). Conducting research may facilitate the identification of existing gaps within the virtual reality/augmented reality tourist sector in Helsinki. This information may be used by businesses and developers to provide novel and inventive experiences that align with customer tastes, possibly facilitating the emergence of fresh items and services. (Charm et al. 2020; INFINITIA 2022.) Determining customer willingness to pay for virtual reality/augmented reality (VR/AR) tourist experiences might provide valuable insights for developing effective pricing strategies (Tao et al. 2022; Zen et al. 2023).

Academic researchers have the ability to evaluate the degree of price sensitivity shown by various client categories, therefore assisting firms in establishing pricing points that are both competitive and financially advantageous. Understanding customer behaviour is essential for informing marketing strategies. Conducting research may facilitate the identification of channels and messages that effectively connect with prospective virtual reality/augmented reality tourists, enhancing the efficacy of advertising efforts. Consumer segmentation may be conducted by researchers using preferences and behaviours as criteria. This enables enterprises to focus on specific client segments by providing customised experiences and implementing targeted marketing tactics (Charm et al. 2020). Besides, collecting feedback on current virtual reality (VR) and augmented reality (AR) tourist offers may facilitate enhancing enterprises' goods and services. Therefore, gaining insights into consumer preferences and aversions can drive improvements and improve user experiences. Conducting research may provide valuable data about the competitive dynamics within the realm of virtual reality and augmented reality tourism in Helsinki (Charm et al. 2020).

This approach facilitates the identification of a business's strengths and weaknesses in relation to its rivals, enabling well-informed decision-making on market positioning (Tao et al. 2022). Researchers have the ability to examine customer perceptions of sustainable and responsible tourism practices via the use of virtual reality and augmented reality experiences. This information has the potential to provide guidance to firms seeking to embrace ecologically sustainable and ethically responsible practices (Zen et al. 2023). Gaining insights into customer patterns and preferences is crucial for strategic long-term planning. The use of market

research may assist firms and stakeholders in making informed investments and strategic choices that are by the dynamic requirements of the market in Helsinki.

Firstly, the study grounded is discussed on understanding customer consumption patterns about customers' use, consumption, and perceptions of virtual reality/augmented reality (VR/AR) technology within the tourist sector, specifically in the Helsinki region. As previously said, the primary aim of this study is to enhance researchers' understanding of the market landscape by conducting information retrieval and selection. This enables them to make more precise business judgments and formulate effective policies. Conducting research, acquiring knowledge of consumption patterns, and comprehending client requirements are crucial and essential for businesses or corporations.

By confining the research focus only to Helsinki, it becomes feasible to investigate the consumer behaviour of individuals using VR/AR tourist services. This approach enables the identification of the locations falling inside and those lying outside the study's purview. Researchers use an online survey methodology to amass a substantial corpus of pertinent and indispensable data for scholarly inquiry. Respondents are provided with a hyperlink to access and respond to inquiries. The objective of the survey is to get responses from a sample size of 100-200 individuals with varying age groups who live, study, or work in Helsinki. The individuals included in the study need not only comprise local residents but may encompass foreign employees, students, or tourists residing or intending to visit Helsinki. The recommended timeframe for data collection from the survey is two months. The limited time allocated for data collection in the survey has some drawbacks. For instance, the limited time available for data collection hindered the acquisition of further replies from other participants, perhaps resulting in minor omissions of specific elements within the gathered material. In the Helsinki region, the population is between 1,300,000 and slightly below 1,400,000 individuals (World Population Review 2023). The observation reveals that the people residing in the city do not currently meet the required density criterion. However, it is essential to note that every individual inside the city has the potential to become a client of Virtual Reality/Augmented Reality (VR/AR) technology for tourism.

By engaging in theoretical research and survey research, scholars can gain insights into users' perceptions of the application of virtual reality (VR) and augmented reality (AR) technology in the tourism sector. This allows them to understand the impact of VR/AR technologies on consumer experiences and derive valuable lessons that can contribute to the advancement of the tourism industry in the future. Additionally, we comprehensively comprehend this particular service sector's psychological aspects and consumer preferences. This includes an under-

standing of the motivations behind consumers' willingness to allocate financial resources towards this novel encounter, as well as the underlying factors contributing to their reluctance to adopt virtual reality/augmented reality services in the coming years. By doing research and surveys, a comprehensive understanding of the market and consumer psychology may be achieved due to the inherent variability in views and viewpoints among individuals. In addition to the valuable insights obtained from the study, it is essential to acknowledge the presence of several cultural, religious, and economic constraints that hinder the clarity and comprehensive applicability of information for customers in Helsinki. As previously stated, the research and surveys were limited to a duration of less than six months, rather than an entire year due to time limitations. Consequently, there is a shortage of comprehensive and detailed information regarding the consumption habits of existing and potential customers. Therefore, the scope of the research will be restricted to examining demographic factors, customer motivations, and preferences, as well as the behavioural aspects of VR/AR tourism compared to traditional tourism in Helsinki.

1.2.1 Research Method

The research method used in this study is quantitative research. Online surveys are one of the methods used to conduct online surveys through web platforms or social networks. Online survey platforms such as Google Forms are used to design survey questions for online surveys. This strategy will easily collect quantitative data from many respondents, and it has the potential to connect with many tourists, locals, and VR/AR enthusiasts interested in the services tourism of Helsinki. The primary survey questions will focus on demographics, frequency of VR/AR experiences, spending patterns, and satisfaction with the service.

Sampling was crucial in this investigation to guarantee the accuracy and representativeness of the data. Helsinki residents and visitors were the study's target audience. Participants in the survey will be between the ages of 18 and over 65. Because of the age diversity, the research offers a thorough and nuanced insight into consumer behaviour in VR/AR travel. There will be between 100 and 200 responders.

1.2.2 Research Objectives and Limitations

Initiating the examination of the arguments, consumption patterns, and purchasing incentives pertaining to VR/AR tourism in Helsinki is contingent upon the formulation of the correct main and sub-questions from the outset. Employing this approach, it will aid in establishing a clear course of action that concentrates on the fundamental knowledge that must be acquired during every stage of the research endeavor, ranging from data gathering to analysis.

The main question of this topic is, ***“How do consumer habits and purchasing behaviour influence the adoption and economic impact of VR/AR tourism experiences in Helsinki?”***

There are three sub-questions to support the analysis of the leading research question.

Sub-question 1: What are the key factors that motivate consumers to engage in VR/AR tourism experiences in Helsinki?

Sub-question 2: What factors, apart from income level, influence how customers spend in Helsinki's VR/AR tourism sector?

Sub-question 3: How do consumer purchasing behaviors influence the sustainability and growth of VR/AR tourism businesses in Helsinki?

1.2.3 Thesis Structure

In the Thesis Structure part, the primary focus is to provide an overview of the thesis's organization and concisely provide the substance of each component. This enables readers to comprehend the structure and effectively articulate the topic of each individual section.

This thesis aims to conduct an extensive examination of the complex interplay between consumer behavior and purchasing patterns in the context of virtual and augmented reality (VR/AR) tourism in Helsinki. Commencing with an all-encompassing preamble, the thesis scrupulously establishes the framework by providing an elaborate historical account of the VR/AR tourism industry, thereby explicating the context in which the investigation proceeds. The introduction provides a clear delineation of the study's objectives and parameters, elucidating the precise aims and constraints that govern the investigation. Following this, a comprehensive research methodology is delineated, emphasizing the stringent process utilized to collect and evaluate data, thereby guaranteeing the soundness and credibility of the results. Subsequent to this methodological explication, the thesis delves into the domain of VR/AR markets, conducting a thorough examination of the expansion path of VR/AR technology in the wider tourism sector. This investigation surpasses a simple examination of the market by exploring the distinctive VR/AR tourism attractions and experiences that dot the Helsinki landscape. By doing so, it provides a more nuanced comprehension of the city's standing in the worldwide VR/AR tourism milieu. Furthermore, the thesis explores the conceptual foundations of consumer behavior by integrating elements of virtual reality (VR) and augmented reality (AR) definitions, customer buying behaviors, and the Technology Acceptance Model (TAM). By doing so, it establishes a strong framework that enables the empirical results to be interpreted and placed in their proper context. The methodological

framework established earlier is implemented throughout the narrative, as the thesis thoroughly analyzes consumer behaviors and buying trends that are unique to the VR/AR tourism industry in Helsinki. The subsequent discussion segment serves as a critical crucible in which the empirical findings are thoroughly examined. It reveals the underlying factors that inspire consumers to engage in VR/AR tourism experiences, explores the nuanced relationship between income and spending behavior, and clarifies the complex relationship between consumer purchasing patterns and the long-term viability and expansion of VR/AR tourism enterprises in Helsinki. Ultimately, the thesis reaches a logical conclusion in which the most significant discoveries are consolidated and simplified, providing a cohesive storyline that not only summarizes the research's fundamental principles but also establishes a foundation for further investigation and exploration in this emerging discipline.

2 VR/AR

2.1 VR/AR Definition

Virtual Reality (VR) technology uses specialised gear, like VR headsets or goggles, to create a completely realistic, generated-by-computer universe that users can engage with (Jaatinen & Kinnunen 2017). VR in travel allows tourists to virtually tour destinations and attractions worldwide. VR can recreate historical events or provide simulated adventures, adding an educational and entertaining aspect to the travel experience. It gives users a sense of presence and immersion, making visitors feel like they are in another location, even at home. Virtual reality (VR) has enhanced the travel experience and helped tourists improve pre-trip planning by providing virtual previews of destinations, accommodations, and activities. (Ali 2023.)

Augmented Reality (AR) consists of overlaying digital content, visuals, or objects over the physical world, usually through a smartphone, tablet, or pair of AR glasses (Jaatinen & Kinnunen 2017). By incorporating digital content into the real-world environment, augmented reality (AR) gives visitors access to more information and interactive experiences. Tourists can use AR apps to access location-specific details, historical facts, and multimedia content about landmarks and attractions. Language is no longer a barrier for travellers nowadays cause AR can be used as a language translation tool to help travellers understand menus, signage, and worldwide languages. Additionally, using maps and directions driven by AR technology makes navigation simpler. Due to obstacles like language hurdles, a lack of a guide, a crowded museum, and more, most tourists don't enjoy museums to their fullest. AR ensures that tourists to the museum have a ton of fun because AR may use interactive animations or audio instructions to bring inanimate things, like statues or paintings, to life. (Georgiou 2023.)

2.2 The Growth of VR/AR in the Tourism Industry

The growth of Virtual Reality (VR) and Augmented Reality (AR) in the tourism industry has been driven by the increasing demand for immersive and interactive travel experiences. This growth has brought about various changes and advancements in the industry.

The tourism industry has leveraged VR/AR for innovative marketing campaigns, enabling businesses to showcase unique travel experiences, attractions, and accommodations to a global audience, enhancing brand visibility and customer engagement (Simbott 2023).

VR and AR technologies have enabled tourists to virtually explore and experience destinations before or after their trips, providing immersive previews of travel experiences and enhancing

destination marketing efforts. Besides, integrating VR/AR technologies in travel planning tools has offered travellers personalised and interactive itineraries, allowing them to visualise accommodations, attractions, and activities before booking, thus enhancing their decision-making processes. (Simbott 2023.)

VR/AR has been integrated into tourism education and training programs, allowing students and industry professionals to gain practical insights into destination management, customer service, and cultural awareness, fostering skill development and enhancing service quality (Simbott 2023).

AR/VR technologies have the potential to enhance sustainability in the tourism industry through various means. By offering virtual tourism experiences, it can help reduce the environmental impact associated with physical travel. Virtual tours and experiences enable individuals to explore destinations without extensive travel, reducing carbon emissions and the strain on local ecosystems. Moreover, VR/AR can be utilised to educate and raise awareness about environmental conservation and sustainable tourism practices. Through immersive and interactive educational experiences, tourists can learn about conservation efforts, local ecosystems, and the importance of sustainable travel, fostering a greater sense of environmental responsibility. (Simbott 2023.)

Hotels and resorts have adopted VR/AR technologies to provide guests with virtual room tours, interactive concierge services, and immersive entertainment options, enhancing the overall guest experience and setting new standards for hospitality service (Marcin 2023). For instance, Marriott International and Four Seasons Hotel have utilised VR technology to provide virtual room tours and experiences, enabling guests to explore hotel amenities and room layouts before making reservations. Hilton and Accor Hotel have incorporated VR technology into their marketing strategies, offering potential guests virtual travel experiences and destination previews. InterContinental Hotels Group (IHG) has embraced AR technology for personalised guest experiences, allowing visitors to access AR-assisted guides and information about nearby attractions, dining options, and cultural landmarks.

2.3 Global Market for AR/VR in Tourism

Virtual Reality (VR) and Augmented Reality (AR) in tourism were experiencing significant growth and garnering increasing interest from consumers and businesses. Growing consumer demand has fueled the adoption of VR/AR technology in the tourism sector by enabling passengers to have immersive and captivating experiences. With the aid of AR/VR technology in tourism, the possibility of efficiently executing tourism strategy and appropriate management has increased. Virtual reality (VR) technology in tourism has much potential as

a marketing tool to raise customer awareness and develop a compelling offer to boost sales. Concurrently, increasing research on augmented reality (AR) in the travel sector seeks to advance tourism operations by offering travellers information that expands their understanding of a particular area, thereby improving the vacation experience and elevating the entertainment factors (Emrah et al. 2019).

Development and execution of immersive travel experiences and destination marketing campaigns are expected to account for a sizeable portion of the tourism industry's anticipated \$304.4 million growth rate and rapid expansion of the worldwide AR and VR market by 2023 (pixelpixel 2022). Moreover, the market for virtual tourism is forecast to grow at a compound annual growth rate (CAGR) of 30.2% between 2023 and 2028, from an estimated valuation of USD 6.1 billion in 2022 to USD 23.5 billion by 2028 (Market Data Forecast 2023). Several regions and countries were at the forefront of adopting AR/VR technologies in the tourism industry, leveraging these innovations to enhance visitor experiences, promote destinations, and drive tourism growth (Optimal Virtual Employee 2023).

Nowadays, the US and China comprise the largest VR/AR markets worldwide (Statista 2023). Chinese consumers find "travel and adventure" to be the most intriguing Virtual Reality-related topic, according to China VR Consumer Survey assessment in 2018. Virtual tourism appears to have a large potential market in China as well as significant economic possibilities. Thus, with its rapidly growing tourism industry, China embraced VR/AR technologies to promote its diverse cultural heritage and popular destinations. Cities like Beijing, Shanghai, and Hangzhou used AR/VR technology to enhance museum displays, historical monuments, and contemporary tourist attractions to attract local and foreign visitors. (Dexue 2022.) The US was a pioneer in incorporating AR and VR technologies into different facets of the tourism sector, especially in major tourist destinations like New York, Los Angeles, and Orlando. Using AR and VR, the US tourism industry engages visitors and creates immersive attractions, from virtual theme park experiences to interactive museum exhibits. One American company that prioritised virtual and augmented reality before all others is Walt Disney. Germany has been one of the leading nations in AR and VR research, with the US and China. Recognised for its rich history and cultural heritage, Germany utilised AR/VR technologies to provide virtual tours of its esteemed castles, museums, and historical sites. One particular example is the work of Quest Rift headsets supplied by the German National Tourist Board for assisting travellers with virtual tours of Germany and specific North Sea and Baltic Sea beaches during the COVID-19 pandemic. (Market Data Forecast 2023.)

2.4 VR/AR Tourism Experiences in Helsinki

Helsinki, the vibrant capital of Finland, was embracing Virtual Reality (VR) and Augmented Reality (AR) technologies to offer tourists an array of immersive and interactive experiences that complemented the city's rich cultural heritage and modern attractions (Patricia 2020).

Virtual City Tour is a program powered by VR to explore Helsinki's iconic landmarks, historic sites, and architectural wonders from the comfort of their accommodations, providing a comprehensive overview of the city's cultural and historical significance. Certain agencies like AtamanTours and Virtual Helsinki are now running the programs mentioned above in Finland (Patricia 2020; AtamanTours 2024).

AR applications showcased historical reenactments of pivotal events in Helsinki's past, allowing tourists to witness key moments in the city's history through immersive digital recreations and informative storytelling, providing a deeper appreciation for its cultural heritage. A specific example, Signe Brander used virtual technology to bring the images to life to create a realistic and vivid space artwork that transports visitors to Helsinki's past (Helsinki City Museum 2023).

2.5 VR/AR Tourism Attractions and Locations in Helsinki

Virtual Reality (VR) and Augmented Reality (AR) technologies have revolutionized the tourism industry, offering immersive and interactive experiences to travelers worldwide. In Helsinki, Finland, VR/AR tourism attractions showcase the city's charm and allure, including the Helsinki City Museum and the Suomenlinna Sea Fortress. These immersive experiences transport visitors into a realm of exploration and discovery, allowing them to explore the city's history, architecture, and arts scene. The Helsinki Music Centre also offers virtual performances. As VR/AR technologies continue to evolve, understanding customers' consuming habits and purchasing behavior is crucial for businesses and stakeholders in Helsinki's tourism industry. This research aims to uncover insights that will enhance the development and promotion of VR/AR tourism experiences, ultimately enriching the overall visitor experience and driving sustainable growth in Helsinki's tourism sector.

Helsinki Cathedral and The Market Square (Kauppatori)

Helsinki Cathedral is situated in the center of central Helsinki, in Senate Square (Senaatintori). The Market Square (Kauppatori) is located adjacent to Senate Square in the South Harbor (OranaTravel 2023). Due to their central location in Helsinki, these points of interest draw a considerable number of visitors. Historical excursions or immersive experiences that highlight the cathedral's architecture and the market square's lively ambiance can be generated via

VR/AR applications. VR/AR experiences may be offered for purchase as mementos or to augment the experience of tourists who are paying a visit to these renowned landmarks. Their inclination to embrace such technologies might be impacted by factors such as affordability and convenience (Proven Reality 2023.)

Temppeliaukio Church (Rock Church) and National Museum of Finland

Anchored in the Töölö neighborhood, Temppeliaukio Church (Rock Church) is situated to the northwest of central Helsinki. The National Museum of Finland is located near the Parliament House and Finlandia Hall in central Helsinki (Viator 2024.) These points of interest, situated in the Toolo neighborhood, provide historical and cultural encounters. Applications utilizing VR/AR technology may provide guided excursions of the museum's collections or interactive tours of the cathedral's distinctive architecture. Patrons with a keen interest in history and culture might exhibit a greater propensity to acquire VR/AR experiences as a means to enhance their comprehension and involvement with said attractions. The quality and value of education can influence the adoption of such technologies (Abdullah et al. 2023.)

Sibelius Monument and Finlandia Hall

Finlandia Hall and Sibelius Monument are both situated in Töölö and are renowned for their cultural significance and hosting of events. Utilizing VR/AR applications, one can virtually attend Finlandia Hall's organized concerts and events or be immersed in the life stories of Finland's greatest composer Sibelius, and his compositions (Ham 2024). As a means of reliving the experience, individuals in attendance at concerts and cultural events might be inclined to acquire a VR/AR experience. The adoption of such technologies may be influenced by factors such as personalization and interactivity (Kelsey et al. 2023.)

Suomenlinna Fortress and Helsinki Zoo (Korkeasaari)

Situated on islands, these points of interest provide distinctive experiences amidst natural environments. Suomenlinna Fortress and the Helsinki Zoo (Korkeasaari) are accessible by ferry from Market Square (OranaTravel 2023). VR/AR applications may provide virtual tours of zoos or historical recreations of forts. Prospective visitors to these locations might be intrigued by the prospect of purchasing a VR/AR experience, which would enable them to investigate inaccessible regions or gain further knowledge about fauna and history. Immersion and realism may influence their adoption of such technologies (Muhammad et al 2022.)

Seurasaari Open-Air Museum and Linnanmäki Amusement Park

The island of Seurasaari, located northwest of central Helsinki, is the location of the Seurasaari Open-Air Museum. Alppiharju district, to the north of central Helsinki, is the location of

Linnanmaki Amusement Park (Viator 2024.) While situated somewhat distant from the city center, these attractions provide unique and varied experiences. VR/AR applications have the capability to furnish immersive experiences and virtual attractions at amusement parks, as well as virtual tours of historic structures at outdoor museums. A VR/AR experience that enhances a visit may be of interest to guests in search of a singular experience. They may be influenced in their adoption of such technologies by their entertainment value and novelty (Muhammad et al 2022.)

2.6 Sustainability in VR/AR

"Sustainable Tourism" refers to actions implemented by and within the travel and tourism sector that are sustainable for the environment. The ultimate goal is to acknowledge the positive and negative impacts that tourism can have. It aims to achieve a balance between positive and negative effects to the greatest extent possible. (GSTC 2023.)

Ecological damage, congestion, and economic leakage are some adverse consequences that may impact a destination. Employment generation, landscape restoration, cultural heritage preservation and interpretation, species protection, and other initiatives all contribute positively to the destination. (GSTC 2023.)

The United Nations Environment Program (2005) and the United Nations World Tourism Organization (2005) provide definitions of sustainability as "Tourism that addresses the needs of visitors, the industry, the environment, and host communities while taking into full account its current and future economic, social, and environmental impacts."

In addition, they assert that a significant balance must be established between the economic, environmental, and sociocultural aspects of tourism development to ensure long-term sustainability. (UNWTO 2005; UN Environment Programme 2005, 11-12)

Tourists' concerns regarding sustainability are addressed by the technological innovation of VR tourism. This has been identified as a sustainable tourism method in the existing literature on VR tourism (Talwar et al. 2022; Wei et al. 2019). VR/AR travel has the potential to substantially reduce carbon emissions associated with transportation (Andreea et al. 2021; Mario et al. 2021; Junghyo et al. 2019). By means of virtual travel, lengthy flights, vehicle journeys, and other modes of transportation that are conventionally necessary to reach tourist destinations are rendered unnecessary. Conventional tourism practices have the potential to strain natural resources, including land, water, and energy. For example, hotels, resorts, and tourism facilities require significant amounts of resources to construct, operate and maintain. Although VR/AR travel does require certain materials and electricity to manufacture a VR headset, it generally necessitates fewer physical resources in comparison to conventional travel. VR/AR

tourism may also alleviate pressure on natural ecosystems through the provision of virtual access to tourist destinations, eliminating the necessity for in-person visits (Roddy Scheer 2023).

3 Customer Purchasing Behaviour

Consumer buying behaviour, alternatively referred to as customer purchasing behaviour, encompasses the actions and thoughts that individuals undertake when they acquire products or services to fulfil their desires and requirements. The process by which consumers make decisions is influenced by a variety of psychological, social, cultural, economic and personal factors. (John 2023.)

3.1 Psychological factors

Psychological factors encompass the internal mental and emotional influences that mold the thoughts, emotions, perspectives, and actions of an individual. Happiness and depression, for instance, are prevalent psychological factors that influence how individuals perceive and react to the world, including aspects of their way of life such as employment or consumer decisions. (Austin 2023.) Psychological factors play a pivotal role in comprehending the underlying motivations that drive individuals to make particular decisions when acquiring products or services.

Motivation

A purchase decision is influenced by the motivation of the consumer. One widely recognized motivation theory is Maslow's theory of the hierarchy of needs, wherein he constructed a framework that systematically ranks human needs from "physiological" necessities for survival to more advanced aspirations for "self-actualization. (Mallika 2023.)

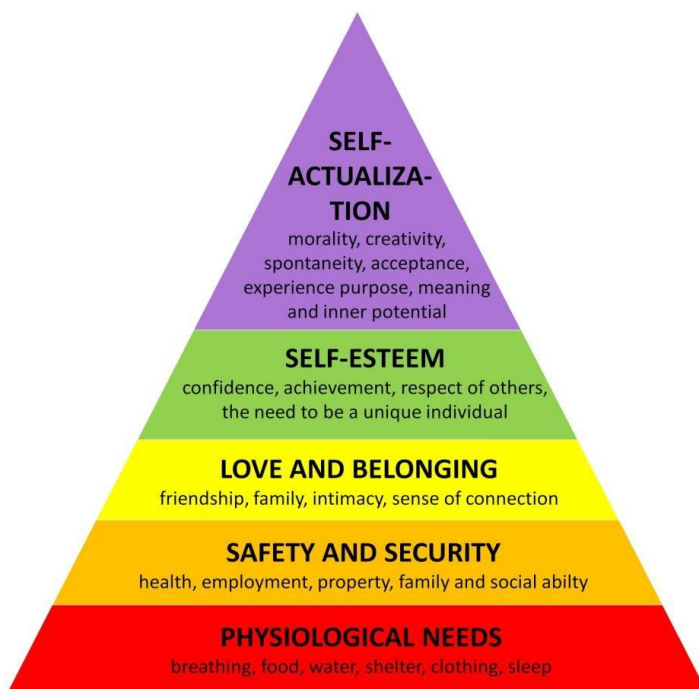


Figure 1. Maslow's Hierarchy Of Needs (Saul Mcleod et al. 2023)

A pyramid structure starts with basic survival needs like food and shelter at the bottom and progresses to higher-level needs such as social belonging, esteem, and self-actualization at the top. The theory posits that individuals are driven to satisfy fundamental requirements before advancing to more complex ones, which has implications for a multitude of facets of human behavior and growth.

Perception

People in the 4.0 technology era must actively engage with contemporary devices such as televisions and phones in order to acquire new information. Visual stimuli such as product packaging, advertisements, and personal experiences have the capacity to shape perception. The perceptions that consumers hold regarding a particular brand or product will thus exert an impact on their purchasing decisions. (Mallika 2023.)

Learning

Consumer information-gathering regarding a product or brand is influenced by knowledge or experience acquired throughout the learning process. For instance, consumer preferences and behavior can be influenced, by conducting in-depth research on a particular product or

company through the examination of evaluations on social media platforms or articles, even in the absence of previous experience. (Mallika 2023.)

Attitudes and Beliefs

Attitudes pertain to assessments of a situation, brand, or product, whereas beliefs concern convictions regarding the existence or actuality of a particular matter. Consumer behaviors and preferences are significantly influenced by their attitudes and beliefs.

For example, some individuals believe that virtual reality may exert mental and psychological effects on its consumers. Because users of virtual reality are frequently cut off from their surroundings and tend to lose track of time. This may lead to psychological tension, depression, chronic stress, and irritability, among other negative outcomes. (Eunhee et al. 2020). In the other hand, Ms. Zoe Collins, a coordinator for a virtual reality-based mental health improvement initiative, disagrees. She believes that adolescents enjoy interactive pursuits such as playing video games. To assist youth, her group is attempting to develop a virtual reality that is appropriate for stress reduction, mental health, and anxiety treatment. (Kyle Dowling 2023.) In conclusion, for marketers to devise successful marketing strategies, a comprehensive comprehension of consumer attitudes and beliefs is essential.

3.2 Social factors

Social factors including family, social roles and status, and reference groups also exert an impact on consumer behavior.

Reference Groups

A reference individual may be a family member, an acquaintance, an organization, a band, or a social class. Additionally, reference individuals may be renowned musicians or esteemed athletes. Customers frequently seek validation or approval from their reference groups. In the 2021 Global Advertising Trust Study, consumer confidence in recommendations from acquaintances is ranked highest by 88% (Nielsen), the research surveyed 40,000 individuals across 56 countries in addition to additional marketing communications (Peter 2023).

Family

The family is a social factor that significantly impacts an individual's buying behavior. The family is the first place to teach people to recognize valuable beliefs, feelings, and consumer tastes. Consequently, consumers frequently choose well-known brands due to the fact that have been utilized by their families for an extended period of time (Mallika 2023). In the case

where family members appreciate consuming fried chicken at KFC rather than McDonald's or Burger King, we may unconsciously favor that brand over the others.

Social Roles and Status

Social status and role exert an impact on purchasing decisions. It is possible for individuals to purchase products or brands that align with the social standing or position they strive to attain. A person belonging to the lower middle class will spend their money on basic necessities, whereas a person from the upper middle class will invest in extravagant items (Prachi 2023). From its inception, the prestige watch brand Rolex has identified affluent individuals as its target demographic. Subsequently, the brand has prioritized the execution of a marketing strategy that specifically targets this demographic, ensuring that users consistently possess sophisticated timepieces that are commensurate with their social standing.

3.3 Personal factors

Consumer behavior can be easily influenced by personal factors. Variations in personality, interests, gender, occupation, age, and way of life, among others, will influence the decision-making process of each individual.

Age

Consumer purchasing behavior is additionally impacted by an individual's age and life cycle (Prachi 2023). Different product categories tend to appeal to consumers of different ages. For example, the elderly require health support devices, while infants require milk. Understanding insight into the specific age target that marketers aim to reach will significantly impact the development of products and the construction of effective advertising campaigns. Additionally, by segmenting prospective consumers according to age, will help increase the possibility of having a common awareness, or sympathy, between the story the brand wants to convey and the customers.

Occupation

Additionally, occupational factors impact consumer behavior. Because each occupation will also have distinct purchasing requirements that are specific to that occupation. (Prachi 2023.) A person whose profession is modeling will conduct the majority of their purchasing requirements within the fashion industry. These would include, for instance, apparel, footwear, and jewelry.

Economic Condition

The income levels of consumers exert a substantial influence on their purchasing power and expenditure preferences. The purchasing propensity of an individual is positively correlated with their monthly income or earnings. Those with greater financial means are more likely to purchase pricey and premium products and services, as opposed to those in the middle-income and low-income brackets who spend primarily on necessities. (Prachi 2023.)

Lifestyle

As originally formulated by Adler, an individual's "lifestyle" refers to a process of transcending the inherent helplessness of infancy through the adoption of a particular pattern of behavior during childhood (Martin 1999). A person's preferences and lifestyles are inextricably linked to their individual preferences. Therefore, it is essential for marketers to identify the target audience for the product or service they are promoting. For instance, a manufacturer specializing in lightweight, scratch-resistant, and watertight backpacks may discover that targeting outdoor enthusiasts, particularly trekkers, results in greater product promotion success.

3.4 Economic factors

Personal income

The purchasing capacity of consumers and the perceived value of goods and services are significantly influenced by personal income. Consumptive individuals possess two different kinds of personal revenue: disposable income and discretionary income (Mallika 2023).

Following the deduction of taxes and other payments, disposable income represents the remaining funds an individual has available for investment and expenditure (Will 2023). The actual purchasing power of consumers is defined by disposable income, which pertains to their investment and spending decisions in accordance with their actual financial resources.

Personal discretionary income is the amount of disposable income left over after essential costs like housing, food, and utilities are covered. It is the amount of money that consumers have available and usually allocated towards leisure activities and discretionary purchases.

Family income

A family's total income is the combined income of all its members (Mallika 2023). Family lifestyle will affect how consumer behavior. Families with lower incomes lead different lives from those with higher income groups. For instance, it is uncommon to find maids in low-income households but common in high-income ones.

Income expectations

In addition to current income, consumers frequently depend on future income expectations. Anticipations regarding the development of personal income often influence the investment and consumption decisions of consumers. Consumer behavior may tend to consume more, even exceeding their current income if they hold the belief that their income will increase in the future. On the other hand, consumers will reduce their present expenditures and increase their savings in anticipation of an imminent precipitous decline in income. (Mallika 2023.)

Consumer Credit

Consumer credit is the impact of credit status and other relevant factors on consumers' utilization of credit for the purpose of making purchasing and consumption decisions. The behavior of consumers is influenced by consumer credit. Credit of this nature is commonly extended by vendors, operating either directly or indirectly via financial institutions or banks. Consumers obtain credit via lease purchases, installment purchases, direct bank loans, and other methods (Ramya et al.2016.) Spending can increase if consumers have easy access to credit. A person who desires to purchase a home but lacks sufficient funds is one example. They might decide to take out a loan to acquire the residence of their dreams if they have a decent credit rating and the ability to borrow.

Liquid Assets

Assets that can be readily converted into cash or utilized in transactions without incurring substantial value loss are referred to as liquid assets (Ramya et al.2016). Consumer behavior is affected by the simplicity with which liquid assets can be converted to currency, as it affords financial flexibility. An illustration of the benefits of liquid assets is that they enable consumers to handle unforeseen circumstances, capitalize on favorable buying prospects, invest promptly, increase their financial security, and strategically manage their debt.

Savings

The prudent and efficient management and utilization of financial resources is what is meant by frugality in consumer behavior. A modification in a consumer's monthly expenditures will result from the choice to allocate a greater portion of one's income towards savings. They will reduce their expenditures and with the funds saved, purchase a product of superior quality and value (Mallika 2023.)

3.5 Cultural factors

Culture

A culture comprises an enduring framework of behavioral norms, traditions, values, and beliefs that are established, refined, and transmitted across numerous generations. Culture is absorbed right into family life, followed by schools and society. (Mallika 2023.) Overall, culture exerts the greatest influence on human behavior, and consumer behavior in specific. That is the customer's cultural paradigm. Consumption, fashion, commodity valuation, and self-expression as it relates to purchases are all significantly impacted by culture. A variety of cultural influences are represented among consumers. For instance, the consumption patterns of Europe and Asia are notably dissimilar. Among Europeans, individualistic and imaginative ways of life may be more prevalent. Their constant quest for unique and diverse experiences is typical. In several Asian nations with substantial cultural traditions, traditional values are frequently observed in everyday life. Family stability and security may be a top priority.

Sub-culture

A subculture comprises a more restricted segment of a broader culture. These factions share common ethical standards and worldviews. It might be comprised of people of diverse ethnicities, religions, nationalities, and geographic locations. As a result of their unique purchasing habits and ways of life, numerous cultural branches will generate distinct market segments (Mallika 2023.) For example, Muslims abstain from consuming beef, whereas women are obligated to conceal their tresses and wear form-fitting attire.

Social class

Social classes, which are classified and organized according to social hierarchy and status, are relatively stable social groups. Social class is determined by a variety of factors, including means, occupation, education, authority, property, ownership, lifestyle, consumption, and behaviors, among others (Ramya et al.2016). Businesses must be cognizant of the behavior of clients across all social strata. Frequently, the consumption patterns of individuals in the same social stratum are comparable. As an illustration, affluent individuals often patronize upscale retailers or shopping centers that offer an extensive assortment of luxury products sourced from renowned international brands, in addition to providing exceptional service. In contrast. The lower and middle classes will prioritize locating sales, markets, or economical retailers as a means to reduce expenses.

3.6 Customer Spending

Customer spending is the comprehensive sum of money that clients spend during a specified time period on products and services. It comprises all expenditures on products and services, ranging from necessities such as utilities and groceries to indulgences and recreation. (The Investopedia Team 2021.)

Regarding the context and objective of the analysis, the classification of consumer spending may differ. Durable goods, nondurable goods, and services comprise the three primary categories of consumer spending. Durable goods are those that are utilized for an extended period of time and have a relatively lengthy lifespan. Washing machines, smartphones, motorcycles, sofas, industrial equipment and tools, and so forth, are examples of tangible products that can be tangibly measured and touched. The anticipated lifespan of durable products, which frequently spans several years, and demands a substantial investment and is anticipated. On the contrary, non-durable goods are those that have a limited or expedited lifespan. Although these items possess a physical form, they typically deplete or become obsolete within a short period. Snacks, beverages, fuel, accessories, toothpaste, tissues, and so forth, are all examples of non-durable products. Non-durable goods are often purchased more frequently than durable goods and are typically part of regular, recurring expenditures. Services are intangible offerings that provide value to consumers through actions, performances, or experiences. Unlike goods, services cannot be touched or stored. Examples of services include surgeries, tutoring, insurance, restaurants, entertainment services, etc. To fulfil consumers' requirements and desires, services frequently require the time, energy, or proficiency of individuals or organizations. In essence, services are performed for the benefit of the client in return for the payment. This distinction contrasts with the provision of products. (StudySmarter 2024.)

3.7 Customer Behaviour in VR/AR tourism with traditional tourism in Helsinki

Consumer Behavior in Traditional Tourism

Traditional tourism involves the use of physical materials such as maps, printed travel guides, and pamphlets to coordinate visits to the various attractions in Helsinki. A multitude of determinants influence decision-making within this domain, encompassing social media endorsements, marketing materials disseminated by tourism organizations, and recommendations from acquaintances. To obtain insight into Helsinki's cultural heritage, tourists typically place a premium on physical activities, including visits to historical sites, museums, and natural marvels, and interactions with locals. Ticket purchases for attractions, guided excursions, souvenir acquisition, and lodging arrangements are customarily conducted through established channels within the realm of conventional tourism, including travel agencies, hotels, and gift shops. Customary visitors frequently articulate a predilection for engaging in comprehensive cultural encounters, attending local establishments for authentic dining experiences, and participating in guided excursions led by knowledgeable local guides (Sophy 2023.)

Consumer Behavior in VR/AR Tourism

Within the realm of VR/AR travel, individuals employ technological advancements including augmented reality applications, virtual reality headgear, and online platforms to undertake remote explorations of various destinations, attractions, and activities in Helsinki. The availability of compelling content, input from peers, and endorsements from social media influencers or online communities all impact decision making in this domain. Consumers are drawn to virtual experiences that provide outstanding visuals, interactive components, and captivating narratives, with the intention of accurately replicating authentic travel experiences. Individuals commonly procure VR/AR travel-related merchandise, including virtual tour packages, VR/AR applications, access to virtual experiences, and other related products, via online marketplaces, subscription services, and physical retail locations. VR/AR travelers frequently place a high value on experiences that provide customizable itineraries, interactive cultural simulations, or guided excursions propelled by artificial intelligence (Lonica et al. 2022.)

4 The Technology Acceptance Model (TAM) & Customer Behaviour

The Technology Acceptance Model (TAM) is a widely employed theoretical framework within the field of technology user behaviour research. The factors that motivate users to implement and utilize new technologies, including artificial intelligence (AI) technologies, are explained by this model. The Acceptance Model (TAM), which was formulated in the 1980s by GS. Fred Davis of Texas Tech University, focused on two critical determinants that impact the adoption of novel technologies: perceived ease of use and perceived usefulness. Several factorial analyses have demonstrated that perceived usefulness (PU) and perceived ease of use (PEOU) can be considered two different dimensions (Davis 1987).

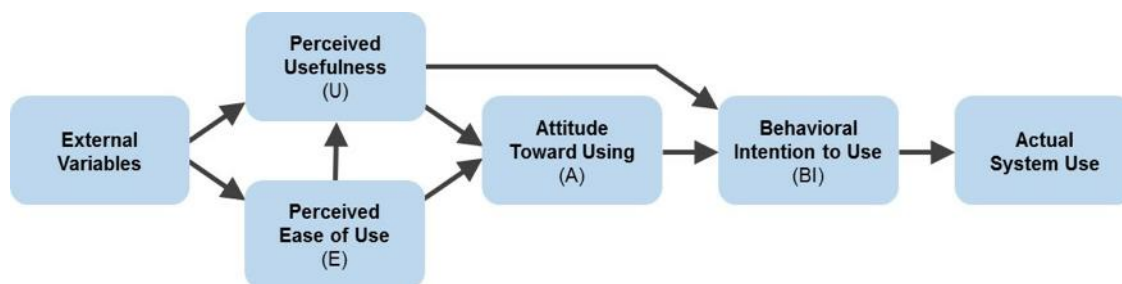


Figure 2. Technology Acceptance Model (TAM) (Davis 1989)

David (1989) defines PU as the extent to which an individual holds the belief that implementing a specific system will contribute to the enhancement of their work efficacy. Simply put, a customer's intention to utilize the service will be increased when he or she is cognizant of the benefits associated with the application of VR virtual reality technology in tourism. The perceived usefulness in practical travel use can be seen through helping to save travel time. By optimizing customers' travel time, users are able to traverse the globe without the need for air travel. As an illustration, Zhao et al. (2022) propose that in the midst of the COVID-19 pandemic, safety considerations may augment the utility of VR/AR for online reservation intention, given that virtual exploration obviates the necessity for in-person visits to strategize journeys.

The extent to which prospective users anticipate operating a novel system with minimal exertion is referred to as its "perceived ease of use (PEOU)." PEOU, in conjunction with PU, is a significant component within the TAM model that elucidates the intended conduct of technology users. It reflects the perceived simplicity, intuitiveness, and user-friendliness of the technology. However, as stated by David (1989), the influence of PEOU on users' behavioral intention to use is comparatively diminished in comparison to PU because the nature of a new system requires users to make efforts to find If they understand how to use it. Having

knowledge of its operation will increase its effectiveness. VR/AR applications that feature user-friendly interfaces and straightforward navigation enhance the perception of usability among travelers. Adherence to VR/AR experiences among customers is positively correlated with the ease of navigating virtual environments and obtaining pertinent information regarding the attractions in Helsinki. The influence of perceived ease of use on technological acceptance is underscored by Yang et al. (2022), who stress the criticality of developing user-friendly and intuitive interfaces for virtual reality and augmented reality.

5 Methodology

This study aims to unravel the intricate realm of consumer behaviour within Virtual Reality (VR) and Augmented Reality (AR) tourism in Helsinki, Finland. It seeks to answer fundamental questions about tourists' and residents' preferences, habits, and purchasing decisions in this vibrant city. Quantitative research is considered the appropriate methodology for this thesis' investigation of consumer behaviour in VR/AR tourism in Helsinki. Because surveys are typically more time and cost-efficient than qualitative approaches like interviews or focus groups, surveys and questionnaires are a viable and effective method. Surveys have the advantage of obtaining a sizable and diverse sample, which improves the generalizability of results to a larger group of Helsinki visitors and locals (TL Jones et al. 2013.)

A thorough survey would be prepared with questions covering various aspects of consumer behaviour, such as VR/AR experiences, spending patterns, preferences, satisfaction levels, and demographics. A combination of open-ended and closed-ended questions, such as multiple-choice and rating scales, will be included in the questionnaire to help address the research objectives. Along with closed questions regarding preferences, purchasing behaviour, and decision-making, open-ended questions will provide respondents with the opportunity to share any additional comments or insights about their VR/AR tourism experiences in Helsinki. The survey will be created entirely in English, even if English may not be the first language of all participants in Helsinki. Because many tourists and residents in Helsinki speak some degree of English, using English can reduce potential language barriers that may arise if Finnish is used. Additionally, polls conducted in English can reach a large and varied audience, including potential tourists to Helsinki from around the globe (TL Jones et al. 2013.)

The target demographic for this study will comprise both tourists and locals of Helsinki to capture a holistic view of VR/AR tourism. The viewpoints of tourists aid in determining what attracts visitors to the city and what influences their decisions, while residents' insights shed light on the local impact and community aspects. Tourists are a crucial segment to study because they represent the primary consumers of VR/AR tourism experiences in the city. Understanding their preferences, habits, and purchasing behaviour is vital for the tourism industry. Examining the perspectives of residents allows for the investigation of potential benefits and challenges associated with VR/AR tourism for the local community. The ages of Helsinki residents and tourists visiting Helsinki might vary widely. The effects of VR/AR tourism can be assessed by looking at consumer behaviour among locals and visitors of all ages. For instance, younger people could have different views and inclinations regarding VR/AR experiences than older people. Thus, to ensure the research provides a comprehensive and

nuanced understanding of consumer behaviour in VR/AR tourism, participants from a wide age range will be included, ranging from young adults (18-24) to middle-aged adults (45-60) and seniors (65+). This age diversity helps identify potential generational differences in preferences, habits, and purchasing behaviour related to VR/AR tourism in Helsinki (TL Jones et al. 2013.)

The expected number of respondents is about 100-200 people. To collect valuable data for the thesis topic, surveys created with Google Forms can be shared across various social media platforms and sites. Promote and post Google Forms polls on Facebook groups like Travel in Finland - tips and ideas, Meet new friends in Helsinki, FIVR - Finnish Virtual Reality, etc. because membership of these groups may include individuals interested in or have experience with VR/AR tourism in Helsinki. Utilize Twitter to engage with Helsinki locals by posting the survey link, citing pertinent local Twitter accounts, and using relevant local hashtags to reach more significant respondents. The poll can be distributed on Reddit, another website with a specialised user base in Finland. Additionally, the personal network will also be powerfully reached by asking friends, colleagues and acquaintances who are studying and working in Helsinki to share the survey with their acquaintances.

The confidentiality and anonymity of respondents' comments are assured, and participants in the survey are completely voluntary and uncompelled. The purpose of the study will be clearly explained to participants.

To analyze and present the research findings effectively, a variety of visualisations (such as bar charts, scatter plots, and line graphs) are utilised as a powerful tool for communicating the main points of this research. Charts allow readers to grasp key insights with clarity and interpretability. As a result, leveraging data visualisation tools is essential for analysing how different factors impact consumer behaviour and helping uncover consumer behaviour trends in VR/AR tourism. The integration of questions related to VR/AR tourism and consumer behaviour in the survey with the theoretical framework of the thesis is crucial in the methodology section to develop a strong research strategy. The survey questions are carefully designed to capture the respondents' thoughts, preferences, and behaviours about virtual and augmented reality experiences in the tourism industry. These inquiries provide empirical data that may be examined using known theoretical models, such as consumer behaviour theories or technology adoption frameworks. Researchers may analyze the manifestation of theoretical notions in real-world consumer behaviour patterns by incorporating survey answers into the theoretical framework. Responses that show a tendency towards VR/AR travel experiences may be analysed using frameworks like the Technology Acceptance Model (TAM) to identify the elements that influence the adoption of technology. This methodological approach guarantees

that the research questions presented in the thesis are not only based on solid theoretical foundations but also supported by empirical evidence obtained from the analysis of survey data within the selected theoretical framework. As a result, it enables a thorough comprehension of the consequences of VR/AR on tourist behavior and industry dynamics.

6 Customer's Consuming Habits and Purchasing AR/VR Tourism in Helsinki

In regard to augmented reality (AR) and virtual reality (VR) tourism in Helsinki, the following are comprehensive survey results examining consumer preferences, perceptions, and spending patterns. The survey, which gauged consumer engagement and market potential with advanced travel technologies, attracted 113 respondents from various demographic backgrounds, with young people constituting the majority of those who participated.

In order to conduct demographic analysis, the initial inquiry of the survey was "*What is your age range?*" The findings revealed that young adults comprised the majority of respondents, with 62.5% falling within the 18-25 age bracket and 27.5% between the 25-35 age bracket. This indicates a notable level of interest among younger users in virtual reality (VR) and augmented reality (AR) technology, as illustrated in Graph Figure 3 below.

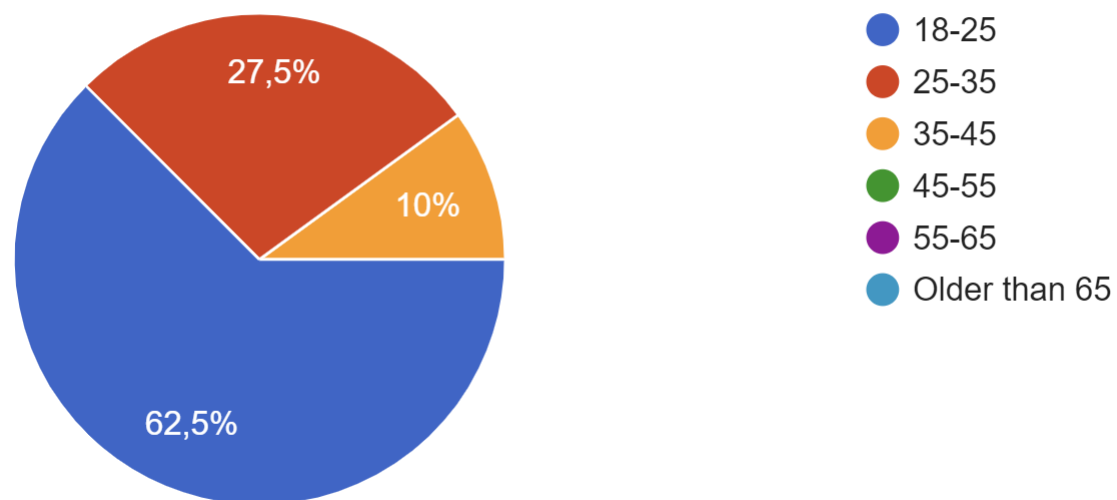


Figure 3. The age range of the survey respondents.

57.5% of respondents were aware of the VR/AR travel experience in Helsinki, whereas 42.5% were unaware, this proportion indicates a respectable level of market penetration exhibited in Figure 4 of the illustration.

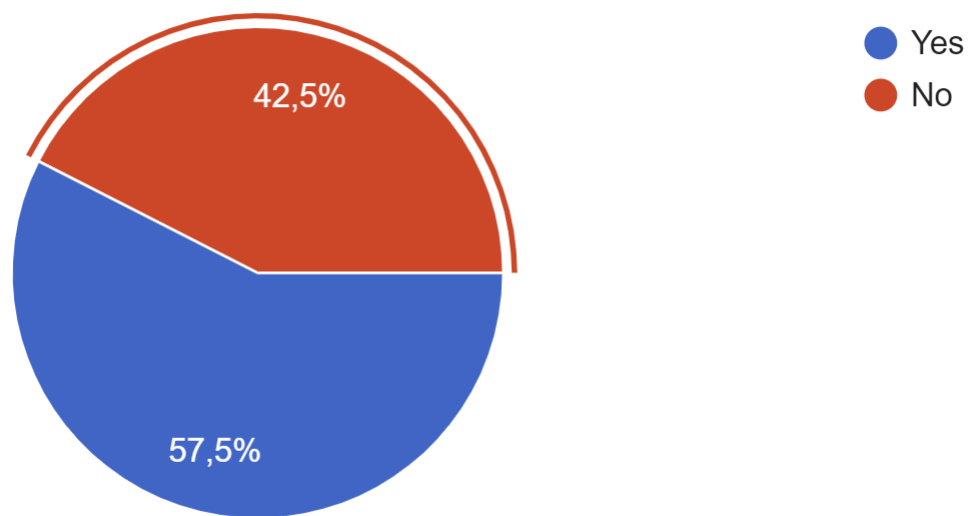


Figure 4. Awareness of VR and AR Tourism Experiences in Helsinki.

The data presented in Figure 5 demonstrates that a substantial majority of respondents (80%) conveyed interest in utilizing VR or AR technology to explore tourist attractions. This finding suggests a substantial market potential.

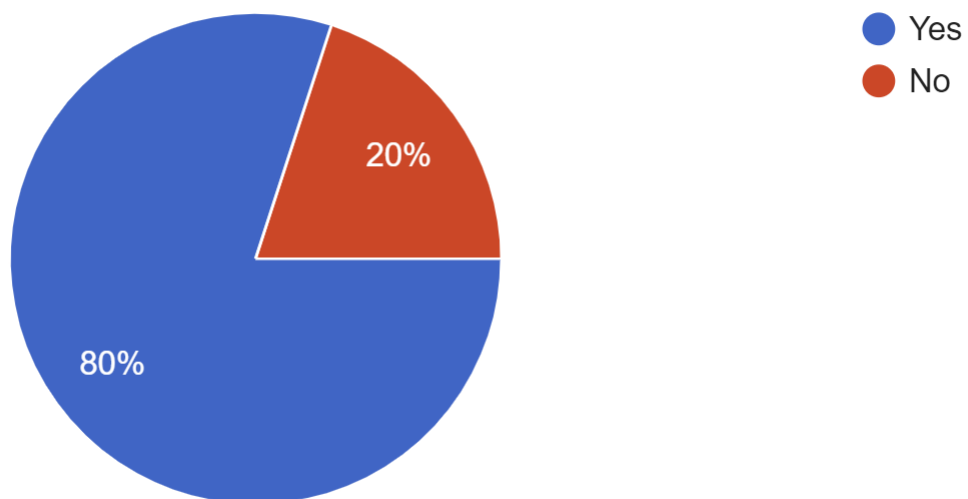


Figure 5. Interest in Exploring Tourist Attractions via VR and AR Technologies

To illustrate the propensity of individuals to contemplate engaging in VR or AR tourism experience in Helsinki, Figure 6 provides a detailed breakdown of likely people considering trying a VR/AR experience showing moderate to high interest, with 32.5% expressing moderate interest and 27.5% very likely to participate. This breakdown reflects a favorable inclination towards these technologies.

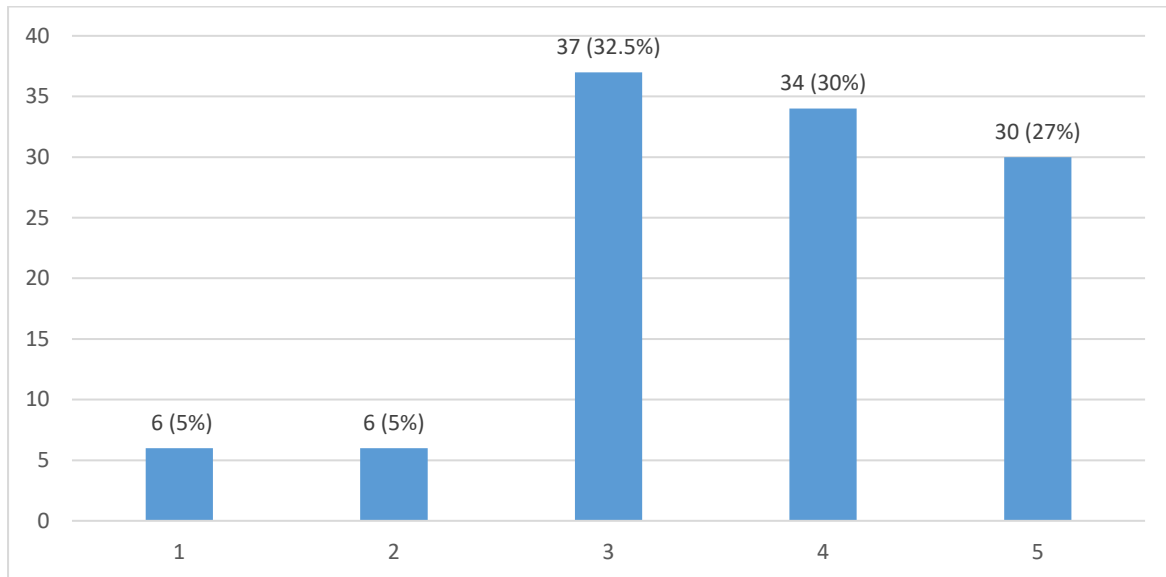


Figure 6. Consideration of VR and AR Tourism Experiences Among Helsinki Respondents

Figure 7 graph depicts the preference for VR/AR experiences in Helsinki. As an illustration of the varied interests of consumers, this survey question allows respondents to choose multiple of answers, the predominant result is seeking unique and immersive experiences, which accounts for 43% of preferences. This finding indicates that a considerable portion of the consumer base is seeking out novel and appealing travel options that surpass traditional sightseeing. Entertainment and enjoyment followed at 27%, showing strong demand for VR/AR applications that provide entertainment and interactive fun. 15% of interest was generated for both socially interactive and educational content, indicating that there is a substantial demand for experiences that not only educate but also foster social connection via shared virtual interactions. Based on the aforementioned considerations, it is recommended that VR/AR tourism enterprises in Helsinki formulate an all-encompassing product strategy that caters to their requirements by integrating components of novelty, education, entertainment, and social interaction. Satisfy the extensive demands of consumers and escalate market penetration.

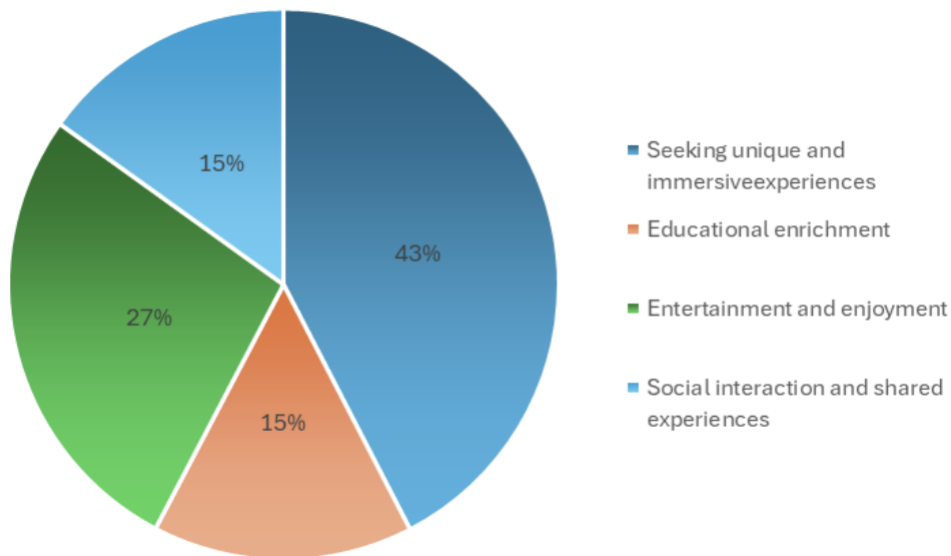


Figure 7. Tourist Preferences for VR and AR Experiences in Helsinki

Bar chart Figure 8 presents data from the survey question about factors that significantly influence consumers' decision to participate in VR/AR tourism in Helsinki. In this question, respondents could choose multiple answers. words to show more diversity in each individual's interests. Attractive pricing and discounts prevailed, chosen by 88 respondents, highlighting cost-effectiveness as an important factor to consider in the decision-making process for VR/AR experiences. Recommendations from friends and family, along with online reviews and ratings, equally influenced 59 respondents, demonstrating social proof and peer opinion in determining Consumer choice patterns also play an important role. According to the responses of 54 respondents, the availability of unique VR/AR experiences is a significant draw for consumers, as the novelty and uniqueness of such offerings are noteworthy. Finally, convenience and accessibility were considered important by 57 respondents, reflecting the need for user-friendly and accessible VR/AR travel options. The data indicates that affordability, peer influence, uniqueness, and easy accessibility are factors that are highly valued by consumers when it comes to VR/AR travel. Therefore, companies operating in this industry should strategically concentrate on these aspects in order to enhance market penetration and customer satisfaction.

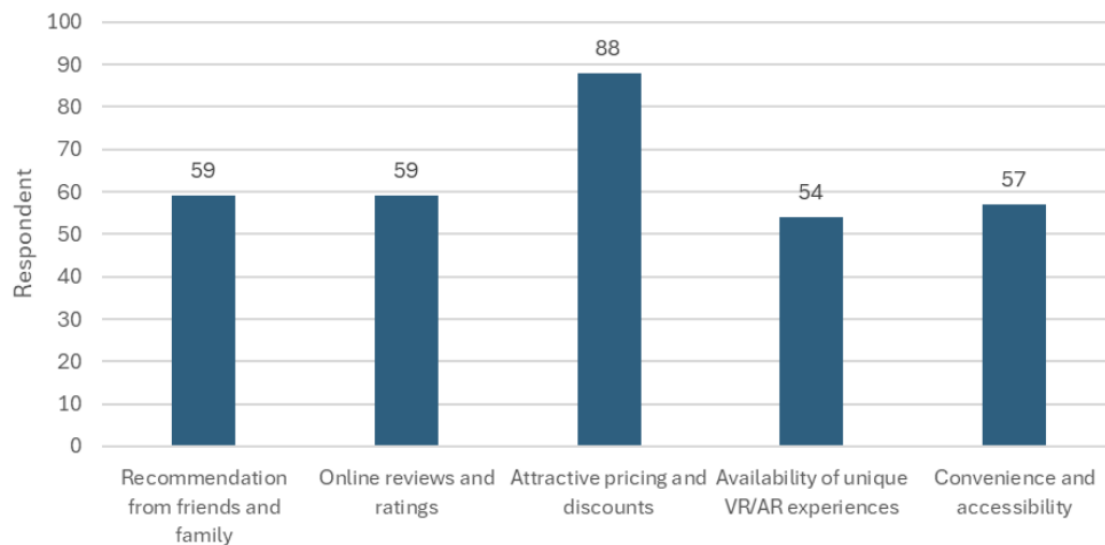


Figure 8. Motivational Factors for VR/AR Tourism Participation in Helsinki.

The expenditure patterns of consumers in Helsinki with regard to VR/AR tourism are examined in detail in Figure 9. This data reveals how individuals allocate their financial resources during this experience. Nearly half of respondents (47.5%) aim to minimize costs, looking for the most affordable VR/AR options, this suggests that a sizeable segment of the market is price-conscious and may be hesitant to invest heavily in the absence of obvious value. However, when the quality of the VR/AR experience is commensurate with the price, 27.5% of respondents do not view cost as an obstacle; this identifies a consumer segment that places a premium on exceptional experiences rather than price. An additional 17.5% of the participants displayed a pragmatic stance towards allocating funds towards VR/AR experiences by striving to strike a balance between cost and quality. A mere 7.5% of respondents do not engage in VR/AR travel, which demonstrates the broad appeal of this technology to those surveyed.

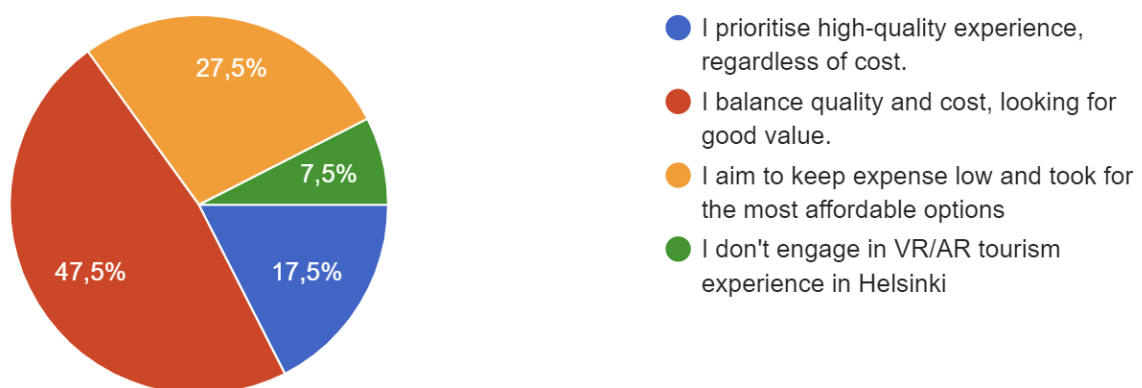


Figure 9. Spending Behavior for VR/AR Tourism Experiences in Helsinki

Figure 10 illustrates the willingness of consumers in Helsinki to invest in VR/AR travel experiences, demonstrating a range of spending thresholds. A significant 35% of respondents felt comfortable spending between €20 and €30, whereas another 30% indicated a preference for spending between €10 and €20. These results suggest that the majority of respondents have a moderate spending inclination. A smaller but notable 15% are willing to invest between €30 and €40, suggesting a more conservative approach to spending on these new technology experiences. At the higher end, smaller segments of 10%, 5%, 3%, and 2% are willing to spend increasingly larger amounts, from €40 up to €70, showing that although a small portion of the market pursuing a premium experience, there is still a real market for higher-end VR/AR offerings. Additionally, 10% of the rest consumers said their spending will depend on the experience itself, demonstrating a willingness to cut costs in accordance with perceived value. The smallest group demonstrated a readiness to allocate "any amount possible for the service," which is indicative of a consumer segment that is not demanding in terms of expenditure, provided that the quality is commensurate with the price.

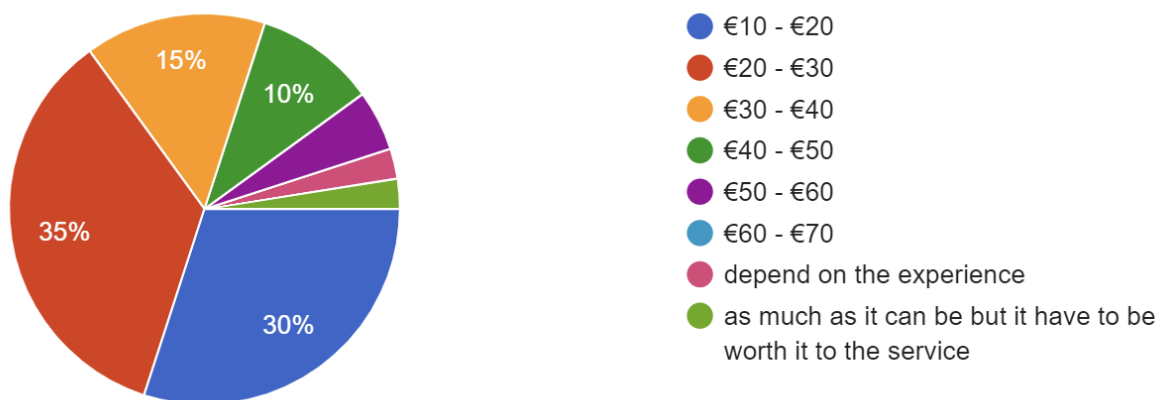


Figure 10. Budget Allocations for VR and AR Tourism Experiences in Helsinki

The impact of annual income on consumer spending decisions regarding VR/AR travel experiences in Helsinki is illustrated in Figure 11. With a score of 4 out of 5, income significantly impacted the spending decisions of 47.5% of respondents regarding VR/AR travel. This constitutes nearly half of the bar chart, consumers base their investment decisions in these technologies on their financial circumstances. Furthermore, 20% of respondents assigned a moderate rating of 3 out of 5, indicating that they carefully consider their income when making

purchasing decisions. On the contrary, scores of 1 and 2, which represent minimal to low influence of income on spending choices, are less prevalent, comprising merely 7.5% and 12.5% of the total respectively response indicating that a minority of the populace does not consider their income to be a substantial constraint on their expenditures on VR/AR experiences. 12.5% more individuals feel entirely unrestricted by their income, with an influence score of 5. Despite the fact that a considerable proportion of Helsinki consumers place considerable importance on financial capability and investment in VR/AR travel, these findings indicate that businesses must take into account varying degrees of financial autonomy when pricing and marketing VR products.

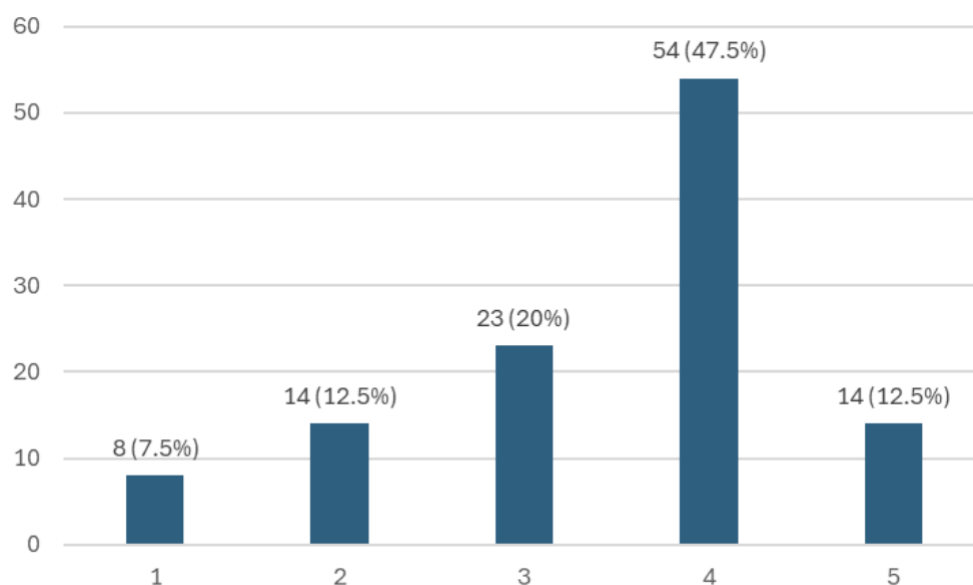


Figure 11. Impact of Annual Income on Spending for VR/AR Tourism in Helsinki

The visual representation of consumer perception regarding the influence of their expenditures on the VR/AR tourism industry in Helsinki is presented in Figure 12. A considerable 60% of the participants hold the belief that their expenditure decisions have a positive influence on the growth of VR/AR tourism businesses in the city. This showing underscores the high level of consumer consciousness regarding the economic potential of these industries. Conversely, a proportion of participants (32.5%) expressed uncertainty regarding the extent to which their expenditures influenced the expansion of local businesses, this demonstrates a degree of ambivalence regarding the way in which individual expenditures can bolster the progress of such enterprises. A minority, precisely 5%, hold the view that their expenditure decisions do not matter. This can be skepticism or a lack of connection between consumer spending and business growth. The survey findings also revealed that a negligible proportion of participants abstained from any VR/AR travel experiences. This underscores the fact that, notwithstanding

the substantial favorable sentiments surrounding the contribution economy, a segment of the populace continues to avoid this domain. This survey underscores the utopian perspective of Helsinki residents regarding their contribution to the growth of the regional VR/AR tourism industry, while also identifying potential avenues for enhanced consumer involvement.

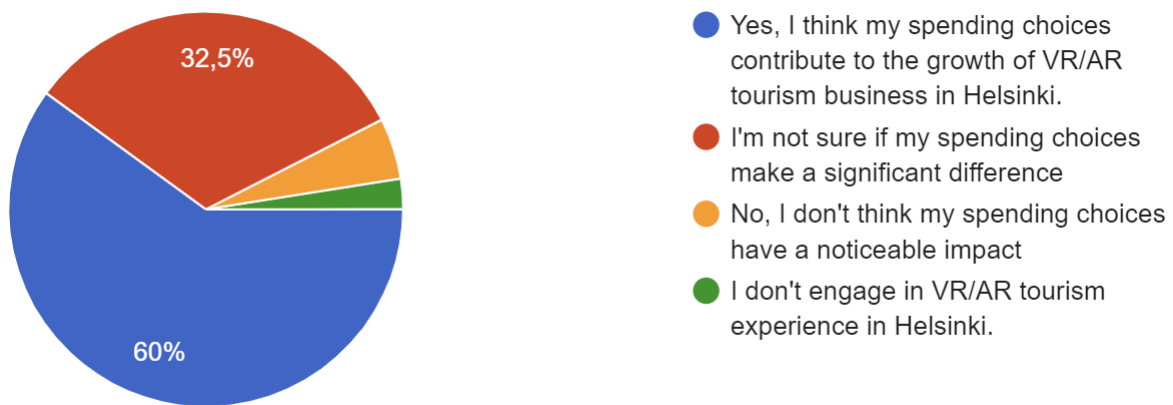


Figure 12. Perceived Impact of VR/AR Tourism Spending on Local Businesses in Helsinki

With the final survey question: "*What suggestions do you have to enhance the financial sustainability and growth of VR/AR tourism business in Helsinki?*", survey respondents gave many suggestions to improve sustainability. Financial sustainability and growth of VR/AR tourism businesses in Helsinki. Many emphasized the need to increase marketing efforts, arguing that more advertising and promotional campaigns could help raise awareness and attract a wider audience. Specifically, some respondents suggested targeting the younger generation with advertising, coupons and attractive promotions, recognizing the potential of young people as early adopters and enthusiastic participants. love the VR/AR experience.

Implementing discount strategies that specifically target younger consumers, including college students and individuals under the age of 30, is considered a feasible method to enhance engagement and facilitate the adoption of VR/AR technologies by a demographic that frequently has a restricted budget but exhibits a greater fascination with technology.

The subsequent suggestions center around the astute implementation of collaborations and location-specific marketing. There is a suggestion that establishing collaborations with nearby museums, galleries, and public spaces might augment the prominence and assimilation of VR/AR tourism within the cultural milieu of the city. One additional strategy suggested was to implement free trials in academic environments as a means of attracting both students and faculty, thereby potentially establishing a fresh clientele.

7 Discussion

7.1 Motivating Factors for Consumers in Helsinki's VR/AR Tourism

Based on the survey results of the 12 questions examined above, it is evident that cost, experiencing value, and social effect are the main motivating factors of consumer participation in VR/AR tourism experiences in Helsinki.

The traveler community's growing awareness has made it clear that traditional tourism is unable to satisfy all of their demands. Virtual reality tourism emerged as a result, offering a wide range of experiences. In particular, customers' top preferences for VR/AR experiences are distinctive and rich experiences. Travel agencies may consider incorporating educational enrichment and entertaining features into their virtual tours. According to the poll results, consumers place high importance on both entertainment and knowledge content when making travel decisions. Furthermore, the significance of affordability is demonstrated by the considerable percentage of participants who indicate that appealing prices and discounts are their top priority. The aforementioned economic sensitivity implies that although consumers are enthusiastic about investigating novel technological advancements in the travel industry, their choices are significantly impacted by the cost-efficiency of the service provided. Additionally, consumer motivation is considerably impacted by social influences, including recommendations from friends and family as well as online reviews. Consequently, external factors significantly influence consumers' decisions regarding their engagement in VR/AR tourism. Active engagement in the VR/AR experience can be facilitated by accessibility and usability, which are additional equally critical factors. The proportion of individuals who desire to engage in an activity may be increased by logistical convenience. In Helsinki, VR/AR tourism providers must tailor their offerings to satisfy the multidimensional consumption motivations of consumers, which are collectively exemplified by the aforementioned factors including novelty, cost, educational value, and social endorsement.

7.2 Income Influence on Spending Choices in Helsinki's VR/AR Tourism

The survey results reveal that while income level is a significant determinant in shaping customers' purchasing decisions within the domain of VR/AR tourism in Helsinki, there are numerous other factors at play.

In order to compel a client to invest in and pay for VR/AR tourism, the experiences must provide exceptional and substantial value. Additionally, the survey reveals that consumers are inclined to pay elevated prices for experiences that not only possess a distinctive quality but

also provide a substantial degree of immersion, thereby enhancing memorability and engagement. When the quality of the VR/AR experience is exceptionally enhanced and remarkable, consumers are more inclined to invest in order to raise their level of interaction and satisfaction with the experience. Expenditures are also impacted by social proof, which includes online reviews, recommendations from family and friends, and peers. Consumers can be more inclined to spend more on their purchases due to the reassurance afforded by positive reviews and testimonials regarding the experience's quality and worth. Lastly, user-friendly and easily accessible VR/AR services have the potential to rise in popularity among consumers, thereby potentially stimulating a greater propensity to make purchases. In conclusion, while income is a fundamental determinant in product consumption, the determination to invest in virtual reality (VR) and augmented reality (AR) tourism in Helsinki encompasses numerous facets, including image and quality social aspect and the experience's overarching singularity.

7.3 Impact of Consumer Purchasing Behavior on VR/AR Tourism Business Sustainability in Helsinki

According to survey results, the development and sustainability of VR/AR tourism enterprises in Helsinki are profoundly and directly influenced by consumer purchasing patterns. Evidently, a considerable proportion of consumers are prepared to invest in VR/AR experiences and base their purchasing decisions on the perception of quality and value. Consistent revenue flow is vital for the financial sustainability of these enterprises, and it is contingent upon consumers' strong willingness to invest in high-quality VR/AR experiences. Moreover, a significant proportion of consumers hold the belief that their expenditure decisions have a beneficial impact on the regional VR/AR tourism industry. This not only inspires continued investment in the improvement of VR/AR offerings but also instills business confidence.

The results of the survey indicate that online evaluations, personal recommendations, and suggestions from friends and family also exert an influence on the purchasing decisions of consumers. In two distinct ways, consumer behavior can encourage corporate sustainability. Initially, word-of-mouth and other forms of recommendation from family and friends will assist in establishing the brand's credibility and attracting new consumers. The second objective is to preserve a loyal customer base through enhancing consumer confidence and trust, which is particularly critical in a technology-driven industry such as travel VR/AR. Positive proof from social will result in greater consumer participation and expenditure, thereby bolstering the expansion and sustainability of the enterprise.

Consumers hold the belief that appealing pricing and discounts additionally function as motivating factors that impact their expenditure choices. Consequently, pricing strategy is also

significant, providers of VR/AR tourism must strike a balance between pricing to retain and attract customers and covering operational expenses and investments in technological advancements, which are essential for long-term viability.

8 Conclusion

The principal objective of this thesis is to conduct an exhaustive examination of the economic interactions, consumer preferences, and behavior that influence the expansion of the virtual and augmented reality tourism industry in Helsinki. Moreover, by adhering to a systematic research methodology, this study will make a substantial scholarly and practical contribution to the field of tourism operations. By conducting extensive research and analyzing responses from a wide range of survey participants, this study illuminates the intricate dynamics of consumer behavior regarding VR/AR travel in Helsinki.

This thesis makes a scholarly contribution by examining consumer segments and their distinct preferences in the context of VR/AR tourism, with a particular emphasis on the Helsinki region. This facilitates tourism operators in Helsinki to gain a more profound comprehension of marketing strategies, allowing them to offer suitable products that align with consumer behaviors and expectations. Furthermore, this study illustrates how VR/AR technology has the capacity to revolutionize conventional travel models through the provision of enhanced and comprehensive user experiences that cater to a diverse array of preferences and requirements.

The methodical approach, combining quantitative surveys with qualitative assessments of consumer attitudes, allows for a comprehensive analysis of the VR/AR tourism sector in Helsinki. However, the study acknowledges certain limitations such as the survey distribution is still not wide enough to reach a large demographic range of respondents. In light of these constraints, surveys must be implemented more broadly in order to extrapolate results to various contexts.

This thesis paves the way for numerous future research avenues as technology continues to progress and become increasingly ingrained in conventional travel experiences. Moreover, by comparing locations or nations, this study offers valuable insights into the cultural and economic factors that impact the adoption of VR/AR in the tourism industry. Last but not least, in its prospective nature, the thesis underscores the significance of sustainability in the advancement of VR/AR tourism by investigating the enduring consequences of virtual tourism experiences on the physical and socio-economic milieu. Subsequently, advocating for ongoing adaptation and innovation in this domain to sustain and enhance consumer involvement, thereby guaranteeing the sustainability and economic progress of the virtual reality/augmented reality tourism sector in Helsinki.

In essence, this thesis not only outlines current consumer trends and behavior but also establishes a foundation for subsequent scholarly investigations and practical innovation within the

domain of VR/AR tourism. Through the integration of empirical evidence and theoretical constructs, this study enhances comprehension regarding the transformative impact of virtual reality technologies on travel experiences in urban locales, especially Helsinki. Therefore, this research will certainly support stakeholders with the desire to develop the Helsinki tourism industry for the better.

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Appendices

Survey questionnaire


Consuming habits and purchasing about VR/AR tourism in Helsinki

Our team consists of Uyen Ngo and Thu Nguyen, both HOMA20 students from LAB University of Applied Sciences. The goal of this survey is to learn more about your ideas on VR/AR technology in the tourist sector, as well as your plans for future applications. Your responses are very valuable in analyzing the preferences and consumption demands of prospective consumers in this sector, which will allow for proper development strategies for both the tourist industry and tourism, such as VR/AR technologies in the near future.

Thank you for taking the time to complete the survey.

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 Không được chia sẻ

Question 1:

What is your age range?

- ☐ 18-25
 - ☐ 25-35
 - ☐ 35-45
 - ☐ 45-55
 - ☐ 55-65
 - ☐ Older than 65
-

Question 2:

Have you ever heard of virtual reality (VR) and/or augmented reality (AR) tourism experiences in Helsinki?

☐ Yes

☐ No

Question 3:

Are you interested in exploring tourist attractions using VR or AR technology?

☐ Yes

☐ No

Question 4:

How likely are you to consider trying a VR or AR tourism experience in Helsinki?

	1	2	3	4	5	
Never	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Absolute

Question 5:

When visiting Helsinki, which type of VR/AR experience do you find most appealing? (select one)

☐ Seeking unique and immersive experiences

☐ Educational enrichment

☐ Entertainment and enjoyment

☐ Social interaction and shared experiences

☐ Mục khác: _____

Question 6:

What factors play the most significant role in your decision to engage in VR/AR tourism in Helsinki?

☐ Recommendation from friends and family

☐ Online reviews and ratings

☐ Attractive pricing and discounts

☐ Availability of unique VR/AR experiences

☐ Convenience and accessibility

☐ Mục khác: _____

Question 7:

How often do you engage in VR/AR tourism experience in Helsinki?

1 2 3 4 5

Never ○ ○ ○ ○ ○ Very often

Question 8:

When it comes to VR/AR tourism experience in Helsinki, which best describe your spending behaviour?

- ☐ I prioritise high-quality experience, regardless of cost.
- ☐ I balance quality and cost, looking for good value.
- ☐ I aim to keep expense low and took for the most affordable options
- ☐ I don't engage in VR/AR tourism experience in Helsinki
- ☐ Mục khác:

Question 9:

How much would you be willing to spend on a VR/AR tourism experience in Helsinki?

- ☐ €10 - €20
- ☐ €20 - €30
- ☐ €30 - €40
- ☐ €40 - €50
- ☐ €50 - €60
- ☐ €60 - €70
- ☐ Mục khác:

Question 10:

To what extent does your annual income influence your spending choices for VR/AR tourism in Helsinki?

1 2 3 4 5

Not at all ○ ○ ○ ○ ○ Significantly

Question 11:

Do you believe your spending choices for VR/AR tourism in Helsinki have a positive impact on local business and the growth of VR/AR tourism in the city?

- ☐ Yes, I think my spending choices contribute to the growth of VR/AR tourism business in Helsinki.
- ☐ I'm not sure if my spending choices make a significant difference
- ☐ No, I don't think my spending choices have a noticeable impact
- ☐ I don't engage in VR/AR tourism experience in Helsinki.

Question 12:

What suggestions do you have to enhance the financial sustainability and growth of VR/AR tourism business in Helsinki? Please share any ideas or recommendations.

Câu trả lời của bạn
