

# **Understanding Consumers' Intentions to Purchase Technological Innovations in the Context of Sport**

by

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## **Author's Declaration**

I hereby declare that I am the sole author of this thesis. This is a true copy of the thesis, including any required final revisions, as accepted by my examiners.

I understand that my thesis may be made electronically available to the public.

## **Abstract**

Researchers have studied innovation adoption in various sport contexts, including digital ticketing, sport team mobile apps, fantasy sports league websites, and smart-connected sports products, to name a few. However, researchers have yet to examine consumers' acceptance of the Apple Vision Pro. This is primarily because the Apple Vision Pro is a new technology that was just introduced to the public in February 2024. Understanding consumers' acceptance of the Apple Vision Pro is warranted since anecdotal evidence suggests it can positively impact the fan experience.

In this dissertation, I conducted three studies to better understand sport consumers' acceptance of the Apple Vision Pro by applying and extending the Technology Acceptance Model (TAM), a theory widely used to study innovation adoption. For all three studies, online surveys designed through Qualtrics were used to collect data (n=272) from Prolific Academic, an online crowdsourcing platform used for behavioral research. In study 1, I included team identification into the TAM to explain why and how sport consumers accept the Vision Pro. To analyze data, structural equation modeling was used and the findings showed that private evaluation and cognitive awareness, two dimensions of team identification, had an indirect positive effect on purchase intention through perceived usefulness, perceived ease of use, and attitude. As such, I recommend that marketers and technology developers implement strategies highlighting the usefulness and ease of use of technologies such as the Vision Pro. I also recommend targeted marketing strategies that

appeal to the emotional and cognitive aspects of team identification, leading to purchase intentions among sports fans.

In study 2, I included constructs from innovation diffusion theory into the TAM to better understand consumers' acceptance of the Apple Vision Pro. Structural equation modeling was used to analyze data. The findings showed that compatibility, trialability, and observability positively and indirectly influenced purchase intention through perceived usefulness, perceived ease of use, and attitude. As such, I argue that marketing strategies for the Vision Pro should not only focus on demonstrating its unique features and benefits but also emphasize its compatibility with users' lifestyles, offer new opportunities to try the technology for sports fans, and showcase the benefits accrued by existing users.

Finally, in study 3, I included perceived monetary value and financial risk into the TAM to understand sports consumers' acceptance of the Vision Pro. Structural equation modeling was used to analyze data. The findings showed that perceived financial risk indirectly influenced purchase intention through attitude. This suggests that while perceived financial risk directly influences consumers' attitudes, these attitudes then significantly shape consumers' purchase intention of the Apple Vision Pro. As such, I argue that marketers should focus on enhancing the positive aspects of the Vision Pro to promote favorable attitudes among sport consumers. For instance, showcasing the unique features of the Vision Pro and emphasizing its benefits in enhancing the fan experience can enhance positive attitudes and offset the negative impact of perceived financial risks.

Theoretically, this dissertation extends the TAM by showing the value of integrating other theories and concepts relevant to the study of innovation adoption. This dissertation also advances understandings of technology acceptance in the context of sport by revealing one of the unique features of sport, namely team identification, and its role in adoption. Therefore, exploring the complex interplay of various factors influencing the adoption of the Apple Vision Pro not only validates existing theories but also provides new insights and perspectives, thus paving the way for further research.

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# Chapter 1

## Introduction

From wearable technology to mobile apps, sports fans' purchase and use of technological innovations plays a consequential role in improving various outcomes (Jakicic et al., 2016; Kim et al., 2017). This is partly because adopting innovations drives efficiency, effectiveness, and competitiveness (Damanpour & Schneider, 2006; Hoerber & Hoerber, 2012; Wolfe, 1994). However, the question of why some fans develop intentions to purchase and use technological innovations while others do not remain unclear, which is especially true in modern society that is colored by rapid technological change (Roser, 2023).

Understanding fans' intentions to purchase and use technological innovations, therefore, warrants attention to keep up with the advancements taking place. Drawing on the technology acceptance model (TAM) and integrating other theories and concepts (e.g., innovation diffusion theory), this dissertation investigates the multifaceted nature of why and how fans develop intentions to purchase technological innovations, revealing the factors influencing fans' intentions to purchase the Apple Vision Pro. While previous studies have attempted to study this phenomenon using an innovation resistance perspective, I use an innovation adoption perspective. In doing so, I argue that the TAM is a useful but incomplete way of explaining fans' intentions to purchase technological innovations.

This dissertation contributes to theory by applying and extending the technology acceptance model (TAM) by integrating constructs from innovation diffusion theory to explain fans' intentions to purchase the Apple Vision Pro. Because the consumption of sport is somewhat unique compared to the purchase of other goods and services, I also include a sport-related factor to better explain why and how fans develop intentions to purchase the Apple



Vision Pro, namely team identification. I develop insights to help sport managers and technology developers implement interventions and strategies to work toward widespread adoption. This dissertation is comprised of three studies. These three studies are connected as each study builds on the results of the previous studies to provide a more holistic understanding of why and how fans develop intentions to purchase the Apple Vision Pro. For instance, in the first study, I include team identification with the TAM to generate a foundational understanding of the emotional and social factors influencing fans' intentions to purchase the Apple Vision Pro. The second study builds on this foundational understanding by taking a more practical perspective, that is, including constructs from innovation diffusion theory with the TAM. In doing so, it extends understandings of why and how fans develop intentions to purchase the Apple Vision Pro. Finally, in the third study, I build on the first and second study to examine the integrative roles of perceived monetary value and perceived financial risk within the TAM. In doing so, I bring an economic perspective to provide a multifaceted understanding of fans' intentions to purchase the Apple Vision Pro.

## **1.1 Background**

From the pre-industrial age to the 21<sup>st</sup> century, technology and innovation have evolved remarkably. Roughly 3.4 billion years ago, the first technology emerged when individuals began using stone tools for cooking, marking a transformative moment in human history (Roser, 2023). After that, humans started to appreciate the potential of technology to improve human flourishing immediately. As years passed by, new technologies emerged to spearhead the industrial revolution, also known as the digital revolution (Wilkinson, 2022). New technologies such as the

seed drill increased agricultural productivity; steam engines resulted in a high level of efficiency for mechanized factory production; and the cotton gin increased cotton cultivation (Wilkinson, 2022). As society grew into the late 19<sup>th</sup> and early 20<sup>th</sup> century, automobile adoption revolutionized economies and led to urbanization (Ostermeijer et al., 2022). The 20<sup>th</sup> century advanced society into the digital age and as a result revolutionized business processes and decision-making (Isaacson, 2014). For instance, the adoption of communication technologies such as mobile phones and the internet grew substantially (OurWorldinData, 2024). In 1990, roughly 518 million people worldwide adopted mobile phones, which surged to an incredible 5 billion by 2010 (OurWorldinData, 2024). Similarly, in 1990, 2.6 million people worldwide used the internet. In a matter of only 20 years, that number grew to 2 billion internet users worldwide (OurWorldinData, 2024).

In contemporary society, technological innovation continues to play a pivotal role in human flourishing. Technological innovation refers to “the implementation of an idea for a new product or a new service or the introduction of new elements in an organization’s production process or service operation” (Damanpour & Evan, 1984, p.394). To be sure, technological innovation is different from radical innovation. Radical innovation is defined as the introduction of new products that represent new technologies and offer significantly greater benefits to consumers than their predecessors (Kobarg et al., 2019). While technological innovation focuses on advancements and improvements in technology, radical innovation focuses on groundbreaking leaps in technology and manufacturing processes and ultimately changes performance (Bouncken et al., 2018).

One new technological innovation that holds a lot of promise to positively impact the 21<sup>st</sup> century is the Apple Vision Pro. The Apple Vision Pro, which uses spatial computing, is what Tim Cook (CEO of Apple) remarked as being revolutionary as the iPhone (Creitz et al., 2024). Spatial computing is a new form of computing “that blends our physical world and virtual experiences using a wide range of technologies, thus enabling humans to interact and communicate in new ways with each other and with machines, as well as giving machines the capabilities to navigate and understand our physical environment in new ways” (Hackl, 2023, p.1). The Apple Vision Pro that was recently introduced to the general public in United States of America in February 2024 is an example of a technology that uses spatial computing.

The Apple Vision Pro is best characterized as a computer that you can wear on your face. That is, instead of looking at a traditional computer screen, the Apple Vision Pro projects everything into the users’ eyes with clear displays. Put differently, it turns the space around you into a digital screen, enabling sports fans to watch games as if they are on a huge screen but without needing an 80 inch TV. Fundamentally, users can turn their space into their own personal theater in which they can watch sports highlights, games, and even play video games, all while feeling like you are in the middle of the action. One of the unique features of this product is that it offers a way to see 3D images without any screens in the way. Anecdotal evidence suggests this new technology can really change how sports fans enjoy and interact with games and other digital content. However, for the full potential of the Apple Vision Pro to be revealed, there needs to be widespread adoption. Indeed, integrating new technologies into organizations and society has generally been difficult historically. From ethical and privacy

concerns to the digital divide and innovation adoption/non- adoption, these challenges have elicited notable attention from researchers, policymakers, and various industry stakeholders.

Researchers have studied these challenges using various theoretical frameworks. One theoretical framework researchers have used to better understand innovation adoption is innovation diffusion theory (IDT). A central premise of IDT is that new technologies take time to diffuse and integrate into society because not all consumers adopt them immediately. There are different types of adopters based on innovation diffusion theory (IDT). Only some consumers adopt technological innovations immediately as they make up roughly one-sixth of the population and are called innovators/early adopters (Rogers et al., 2014).

Conversely, roughly one-sixth of consumers will slowly adopt technological innovations (Rogers et al., 2014). These consumers are called laggards. The other two-thirds are consumers who wait to adopt a technological innovation because they believe that the business will improve its technological innovation or prices will drop (Rogers et al., 2014). These consumers are called late-adopters and represent the mainstream public. There are also consumers who will not adopt technological innovations that organizations or societies implement.

This can be problematic because there needs to be widespread adoption for the full potential of technological innovations to be revealed and for all members of society to have equal access to these technologies. After all, breakthrough technologies such as the computer and the automobile changed society because of consistent adoption rates. This partly resulted from interventions implemented to entice more consumers to adopt these technologies. Of course, the world would look very different today if consumers had not adopted them.

Researchers have used various perspectives to better understand the challenge of why some consumers adopt technological innovations while others do not. One perspective researchers have used is innovation resistance, which is regarded as negative attitudes consumers form toward new products and services that trigger change within the status quo (Ram & Sheth, 1989; Szmigin & Foxall, 1998). Resistance to change describes consumers' difficulty breaking a well-established routine or the emotional stress endured when the consumer has to undergo changes (Guo et al., 2013).

For instance, individuals initially resisted adopting computers that disrupted typewriters (Isaacson, 2014). This is partly because individuals are likely to resist changes when those changes disrupt conventional behavior (Ford et al., 2008). To develop a better understanding of innovation resistance, researchers have identified factors that may relate to innovation resistance (Laukkanen et al., 2007; Talwar et al., 2020), namely usage, social risk, tradition, and image barriers (Ram & Sheth, 1989). These factors are also called adoption barriers because they “paralyze the desire to adopt innovations” (Ram & Sheth, 1989, p. 7).

Another perspective researchers have used is innovation adoption. Specifically, researchers have applied various models and theories to investigate adoption drivers of technological innovations in various contexts, including healthcare, retail, tourism, and sport (Chen et al., 2019; Gefen et al., 2003; Kim et al., 2017; López-Nicolás et al., 2008; Pai & Huang, 2011). Innovation diffusion theory (IDT) and the TAM have been frequently used to examine why and how consumers adopt technological innovations. In doing so, researchers have identified key adoption drivers such as image, compatibility, trialability, perceived usefulness,

and perceived ease of use. I will discuss these adoption drivers in more detail in the subsequent chapters.

To be sure, technological innovation adoption and resistance are distinct concepts given that the latter “is not the mirror image of adoption, but a different form of behavior” (Gatignon & Robertson, 1989, p. 47). Technological innovation resistance entails attitudinal and behavioral patterns different from adoption behaviors (Kleijnen et al., 2009; Szmigin & Foxall, 1998). In this dissertation, I will address why some fans develop intentions to purchase technological innovations while others do not from the perspective of technological innovation adoption. While other researchers have also used this perspective to undertake this investigation, research gaps must be closed to develop a more comprehensive understanding.

## **1.2 Problem Statement**

The sport industry is global and multifaceted. It consists of various segments such as sport consumption (i.e., entertainment and recreation), sport products and services (i.e., sport equipment), and sport investments (i.e., outdoor ice rinks) (Milano & Chelladurai, 2011). In addition, the sport industry comprises various contexts such as youth sport, intercollegiate sport, professional sport, esports, and community sport. These segments and contexts all contribute to the growth of the industry (Milano & Chelladurai, 2011). In 2022, it grew from \$486.61 billion to \$512.14 billion in 2023 at a compound annual growth rate (CAGR) of 5.2% and is expected to grow to \$623.63 billion in 2027 at a CAGR of 5.0% (GlobeNewswire, 2023).

Fundamental to the growth of the sport industry and its uniqueness are sport consumers who behave differently than traditional consumers. This is partly due to a concept known as

team identification, defined as “the degree to which a consumer feels a sense of belonging to and connection with other spectators and fans of a sports team” (Funk et al., 2022, p.229).

Researchers have found that highly identified sport consumers are more likely to purchase and use sport-related products (Funk et al., 2022). What makes the sport industry unique compared to other industries is not only sport consumers but also teams enamored with beating rivals, professional sport leagues sharing revenue, and channeling the passions of both players (the employees) and fans (the customers) (Foster et al., 2006). To be sure, professional sport and other businesses are also similar insofar as they both engage in value creation, branding, funding new sources of revenue, product innovation and market expansion (Foster et al., 2006).

Also, the sport context is unique because of the attributes of sport organizations, namely “consumer behavior, the relationship between sport and government, regulatory regimes, strategy, organizational structure, human resource management, organizational culture, governance, and performance management . . .” (Hoye et al. 2008, p.507). Researchers have argued that these unique attributes influence how theories and strategies are implemented by sport managers (Hoye et al., 2008). As it relates to technological innovation, the sport industry is unique since various players within the industry rely on it for effectiveness, survival, and to keep up with the economic and societal pressures to implement new ideas and management practices (Damanpour & Schneider, 2006; Hoerber & Hoerber, 2012; Wolfe, 1994). From Moneyball revolutionizing the way baseball is played, organized, and managed (Wolfe et al., 2006) to social media changing the way sport is consumed (Naraine et al., 2016; Yan et al., 2019), the

prevalence of technological innovation in professional sport continues to change its landscape and future trajectories.

Given the proliferation of technological change and advancement in the sport industry, there has been a growing interest in innovation within sport management research over the past decade (Ratten & Ferreira, 2016; Tjønnndal,2017). One line of research scholars have focused on is technological innovation adoption. To develop a better understanding of why and how consumers adopt technological innovations, researchers have applied various theories such as institutional theory and legitimization of innovative behavior, theory of reasoned action, the determinants of innovation adoption through an econometric perspective, and diffusion theory (van Oorschot et al., 2018).

Researchers have also examined technological innovation adoption in different sport contexts (Marangunić & Granić, 2015; Sagnier et al., 2020; Wani & Ali, 2015), namely sport team mobile apps (Kim et al., 2017), sport-related social media platforms (Mahan, 2011), smartphones (Ha et al., 2017), sport websites (Hur et al., 2012), sport-related apps (Kang et al., 2015), and fantasy sport league websites (Kwak & McDaniel, 2011) (see Table 1). However, despite their recent popularity in the sport industry, researchers have overlooked other sports contexts such as the Apple Vision Pro. The Apple Vision Pro shows early potential to enhance the fan experience, provide new revenue streams, and ultimately engage in new growth opportunities.



## **Purpose**

The purpose of this dissertation, therefore, was to investigate the factors influencing sports fans' purchase intentions of the Apple Vision Pro.

### **1.3 Research Questions (Study 1)**

In study 1, I include a sport-related factor into the technology acceptance model, namely team identification, to examine consumers' purchase intentions of the Vision Pro. The following research questions are addressed in this study:

- How does team identification influence the two belief constructs (perceived usefulness and perceived ease of use) of the technology acceptance model?
- What is the relationship between perceived ease of use and perceived usefulness related to the Apple Vision Pro?
- How do the two belief constructs (perceived usefulness and perceived ease of use) influence attitude toward purchasing the Apple Vision Pro?
- Does attitude mediate the relationship between the two belief constructs of the TAM and purchase intention?
- How do perceived usefulness, perceived ease of use, and attitude mediate the relationship between dimensions of team identification and purchase intention?
- How does attitude influence purchase intention of the Apple Vision Pro?

### 1.4 Hypothesized Model (Study 1)

The following is a visual representation of the hypotheses that will be tested.

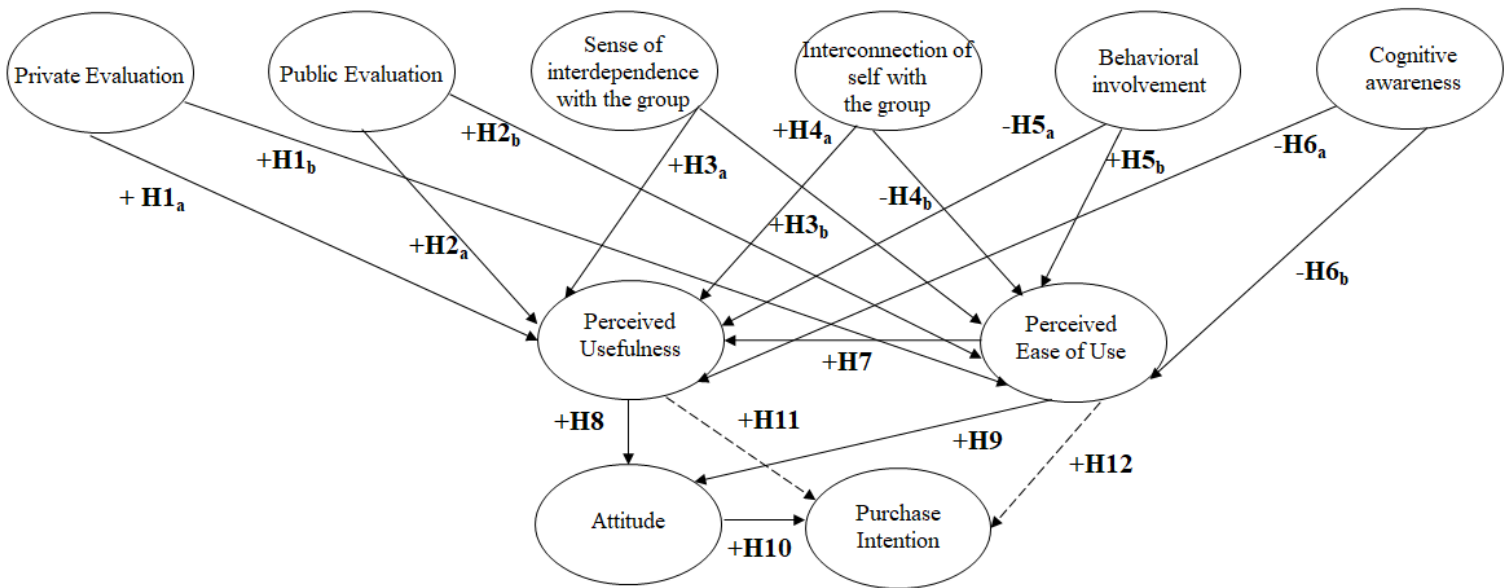


Figure 1. Hypothesized Model 1: Association of the dimensions of team identification with purchase intention as mediated by perceived usefulness, perceived ease of use, and attitude

### 1.5 Research Questions (Study 2)

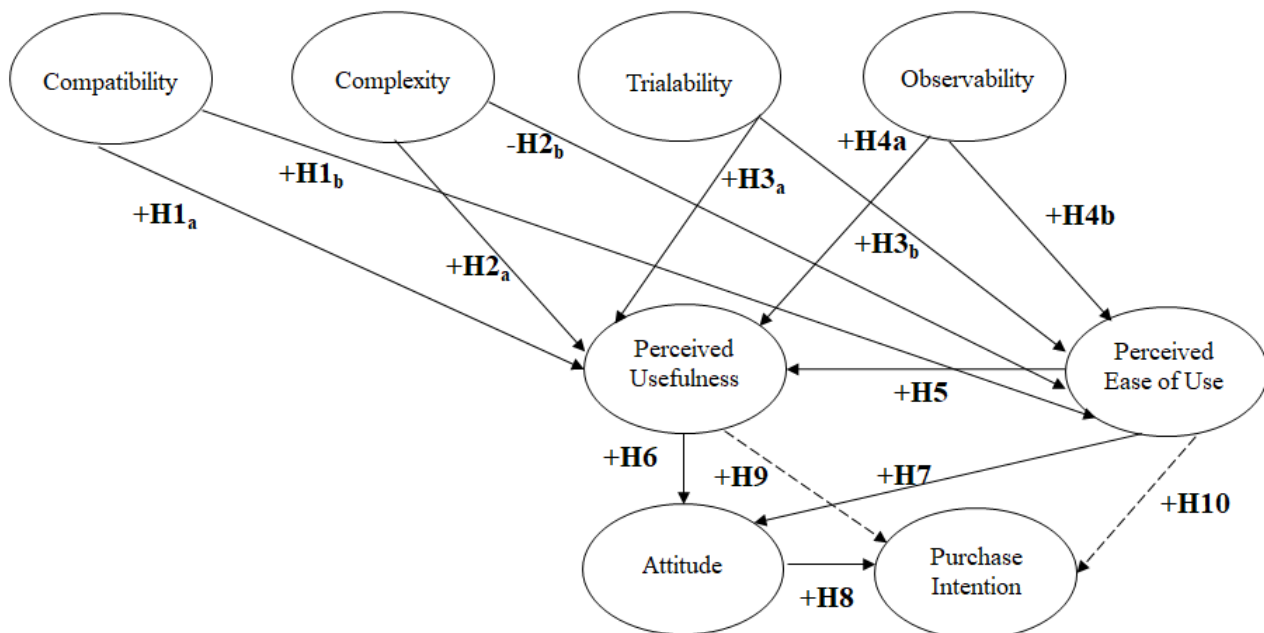
Guided by innovation diffusion theory and the technology acceptance model, in this study I better understand sport consumers' purchase intentions of the Apple Vision Pro. The following research questions guided this study:

- Do constructs from innovation diffusion theory influence perceived usefulness and perceived ease of use?

- What is the relationship between perceived ease of use and perceived usefulness related to the Apple Vision Pro?
- How do the two belief constructs (perceived usefulness and perceived ease of use) influence attitude toward purchasing the Apple Vision Pro?
- Does attitude mediate the relationship between the two belief constructs of the TAM and purchase intention?
- Do perceived usefulness, perceived ease of use, and attitude mediate the relationship between constructs from innovation diffusion theory and purchase intention?
- How does attitude influence purchase intention of the Apple Vision Pro?

### 1.6 Hypothesized Model (Study 2)

The following is a visual representation of the hypotheses that will be tested.



*Figure 2.* Hypothesized Model 2: Association of innovation diffusion theory constructs with purchase intention as mediated by perceived usefulness, perceived ease of use, and attitude

### **1.7 Research Questions (Study 3)**

Using the technology acceptance model, in this study I better understand sport consumers' purchase intentions of the Apple Vision Pro. The following research questions guided this study:

- Does perceived usefulness and perceived ease of use influence perceived monetary value and perceived financial risk?
- What is the relationship between perceived monetary value and perceived financial risk?
- Does attitude mediate the relationship between perceived financial risk and purchase intention?
- Do consumers' attitudes influence their purchase intentions of the Apple Vision Pro?

### 1.8 Hypothesized Model (Study 3)

The following is a visual representation of the hypotheses that will be tested.

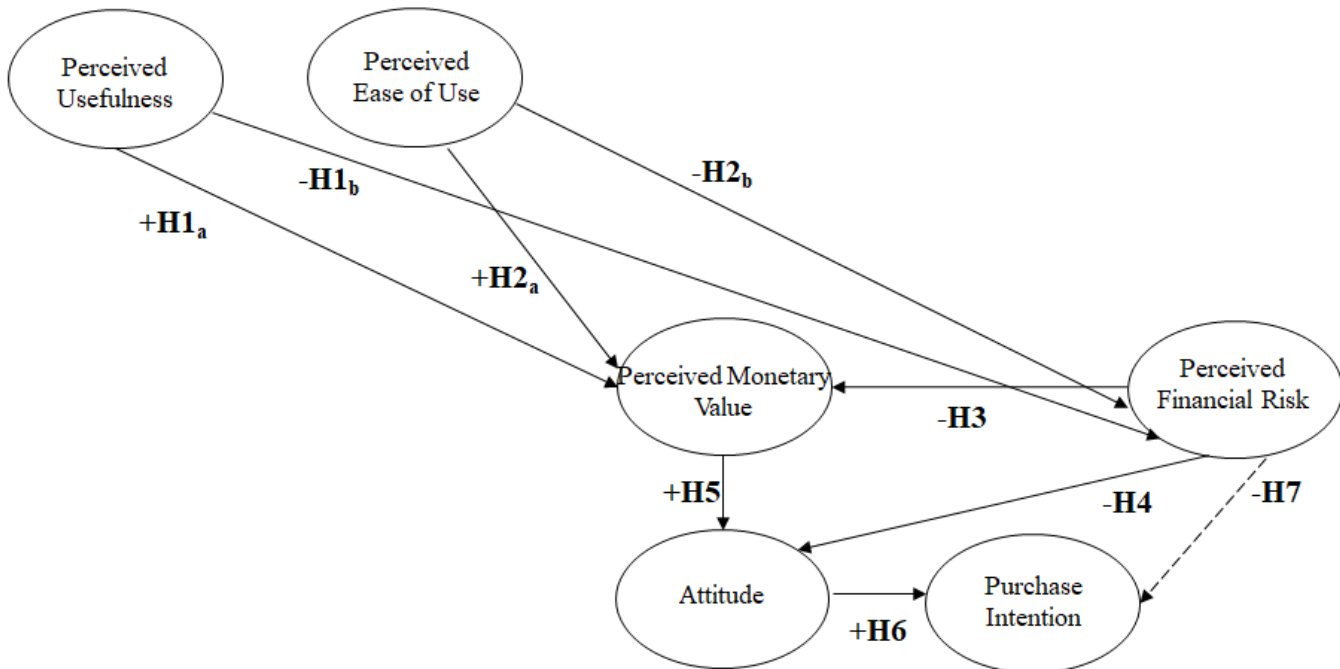


Figure 3. Hypothesized Model 3: Association of perceived usefulness and perceived ease of use with purchase intention as mediated by perceived monetary value, perceived financial risk, and attitude

### 1.9 Significance of the Dissertation

In this dissertation, I examine the factors influencing sport consumers' purchase intentions of the Apple Vision Pro. I provide an explanation for why and how sport consumers adopt the Apple Vision Pro. This explanation has yet to be considered in the sport management literature. The results from this dissertation have both practical and theoretical implications.

First, the results can help inform professional sport organizations, teams, and sport-related firms on how to increase adoption rates of the Apple Vision Pro.

Specifically, I suggest targeted marketing strategies and behavioral interventions to help address the challenge of a lack of widespread adoption that may constrain the full potential of technological innovations to positively impact the sport industry. It can also help professional sport organizations and teams plan and quickly adapt for future technological changes by understanding the unique behavioral tendencies of sport consumers in terms of purchasing and using technological innovations. Second, the results from this dissertation advance understandings of the technology adoption model in the context of sport. In doing so, this dissertation prompts future researchers to better understand the uniqueness of sport in terms of understanding why and how fans develop intentions to purchase technological innovations by using this dissertation as a foundation.

This dissertation also entices future researchers to build more robust evidence by replicating these studies using different methodological approaches and examine different sport technologies to improve the generalizability of the research models. Fundamentally, this dissertation catalyzes future researchers to verify my argument and challenge it using different perspectives. In doing so, the debate of whether sport consumers are unique compared to traditional consumers can be better understood as well.

### **1.10 Delimitations**

There are boundaries to the research problem that I am investigating. First, while there are a variety of other sport-related factors that researchers may include in their model to explain

why and how fans develop intentions to purchase technological innovations, this dissertation is limited to examining only team identification as a sport-related factor. Second, this dissertation does not provide a complete literature review of all concepts and theories related to technological innovation adoption and the context of sport. Instead, it only draws on notable studies relevant to my research questions.

### **1.11 Assumptions**

There are several assumptions that I start with in this dissertation. The first assumption is that consumers' purchase intentions to adopt sport technologies are a strong predictor of adoption. Of course, consumers may not adopt the sport technologies under examination despite their intentions. Furthermore, the intention-behaviour gap is another issue that needs to be examined directly within specific contexts, which is beyond the scope of this dissertation. The second assumption is that consumers will continue using these sport technologies, granted that purchase intentions lead to actual adoption. There have been multiple incidents in which consumers initially adopted a technological innovation, used it for a short period, and then stopped using it. Again, this issue is another topic for future research.

The final assumption is that the Apple Vision Pro can positively impact the fan experience. To be sure, there is a lack of robust empirical support to show whether it can actually impact the fan experience. Finally, I assumed the target sample recruited for this dissertation was familiar with the Apple Vision Pro. Although a video was shown to describe the basic characteristics of the Apple Vision Pro, there is a possibility that participants were not knowledgeable about the Apple Vision Pro.

## **1.12 Organization of the Dissertation**

This dissertation is organized into three separate studies. Although each study is similar since it applies the TAM to examine sport fans' purchase intentions of the Apple Vision Pro, each study is nonetheless distinct. In Chapter 2, I provide a literature review of two main theories that underpin this dissertation, namely the Technology Acceptance Model (TAM) and Innovation Diffusion Theory. I also provide a literature review on the major concepts explored in this dissertation: team identification, perceived monetary value, and perceived financial risk. Chapter 3 consists of the method, results, and discussion sections for study 1. Chapter 4 consists of the method, results, and discussion sections for study 2. Chapter 5 consists of the method, results, and discussion sections for study 3. Finally, I provide a conclusion section at the end of chapter 5 to wrap up the dissertation.



## **Chapter 2**

### **Literature Review**

#### **2.1 Chapter Overview**

Researchers have applied and extended different theories to better understand technological innovation adoption. Some of the most widely used theories include the Theory Reasoned Action (Fishbein & Ajzen, 1975), the Theory of Planned Behavior (Ajzen, 1985, 1991), the Technology Acceptance Model and its different extensions (TAM) (Davis et al., 1989; Venkatesh & Davis, 2000; Venkatesh & Bala, 2008), and Innovation Diffusion Theory (IDT).

Researchers have used other theoretical frameworks as well such as institutional theory and legitimization of innovative behavior, social cognitive theory, and the determinants of innovation adoption through an econometric perspective (van Oorschot et al., 2018). In this chapter, I first discuss IDT to better understand why consumers adopt or reject sport technologies. I then discuss the Technology Acceptance Model (TAM), which I apply and extend to understand why and how fans adopt the sport technologies under examination in this dissertation.

#### **2.2 Innovation Diffusion Theory (IDT)**

In the early 1960s, Rogers (2003) developed innovation diffusion theory (IDT) to explain the process of how, why, and at what rate new technologies are communicated through different channels over time and between members of a social system. Fundamentally, IDT describes why individuals adopt or reject a technological innovation based on their beliefs (Rogers, 2003). In

the review of literature on IDT, I describe the elements of diffusion, the innovation-decision process, and characteristics of innovations.

The four main elements that are central to Rogers' (2003) IDT are the following: the innovation, communication channels, time, and the social system. It is important to note that each of these elements is distinct and play a vital role in explaining how and why innovative ideas and technologies spread in a social system (Rogers, 1962).

### **2.2.1 The Elements of Diffusion**

#### ***Innovation***

What is considered an innovation? Rogers (1983) defines it as an idea, a practice, or tangible artifact that is regarded as new by an individual or other unit of adoption. "It includes all sets of products and services which are new or old but present an unexampled use for the user when he uses it or simply when a user perceives it to be new in terms of use, it becomes an innovation" (Wani & Ali, 2015, p.104).

Since then, there have been different definitions of innovation put forward by researchers in a variety of academic disciplines (Damanpour & Schneider, 2006). In the subfield of sport innovation, it is defined as "proactive and intentional processes that involve the generation and practical adoption of new and creative ideas, which aim to produce a qualitative change in a sport context (Tjørndal, 2017, p.293).

Based on a literature review of previous research on innovation in sport (Markula & Silk, 2011), Tjørndal (2017) categorized sport innovation into (1) aspects of sport innovation and (2) sport innovation types. The former includes technological, institutional change, entrepreneurship,

social issues, management and leadership, unethical innovation, emergence of new sport, and market influenced change. The latter includes social, technological, commercial, community-based, and organizational.

In this dissertation, I focus on technological innovation as a type of sport innovation, not an aspect of sport innovation. The fundamental difference is that under aspects of sport innovation, technological innovation consists of the creation and improvement of sport equipment (Tjørndal, 2017). The improvement of sport equipment through technological innovation (i.e., clap skates in speed skating, bench shirts in powerlifting, polyurethane swimsuits in competitive swimming, etc.) is usually associated to elite sports and performance enhancement (Loy, 1968).

Under the category of sport innovation types, technological innovation takes place through advancements and developments in technology (Pinch & Henry, 1999). Advancements in technology such as the internet and mobile apps have changed the way people consume sport (Tjørndal, 2017). Think about the rise of e-sport, fantasy sport leagues, and online betting (Ratten & Ferreira, 2016a; 2016b). The technological innovation under examination in this dissertation, namely the Apple Vision Pro, is also an example of advancements in technology that can change the way people consume sport. As such, it fits under this category of sport innovation types.

### ***Communication Channels***

The second main element central to Rogers' (2003) IDT is communication channels. Communication channels are utilized by consumers to share information with each other.

Specifically, the sharing of information is focused on an idea (i.e., innovation). There are two different communication channels in which this takes place: mass media and interpersonal channels.

Rogers' (2003) argued that interpersonal channels such as face-to-face communication between two or more people is stronger than mass media channels such as social media in terms of persuading other individuals to adopt an innovation. This is because Rogers' (2003) contends that because face-to-face communication takes place with two or more individuals who may share similar characteristics (i.e., religious beliefs, political beliefs, socioeconomic status, etc.), it can therefore influence them to adopt an innovation since people often rely on other people's feedback who have previously adopted the innovation.

### ***Time***

The third main element central to Rogers' (2003) IDT is time. IDT emphasizes time to be connected to the innovation-decision process. That is, the time it takes for an individual to move from becoming aware of an innovation to its eventual adoption or rejection. In other words, IDT highlights the speed of an innovation in terms of how quickly it is diffused into society or adopted by consumers.

### ***Social System***

The fourth main element central to Rogers' (2003) IDT is the social system. According to IDT, a social system includes individuals, nonformal groups, organizations, and subsystems (Rogers' (2003)). These players in the social system work together to solve problems and ultimately achieve a common goal. As such, the norms and expectations of a system dictate the

behaviors of current and new members of the system, which in turn impacts their innovativeness and the overall adoption rate within a system. It is important to note that an innovation only becomes meaningful when it is accepted as one by a social system. “The diffusion of innovation only takes place when a social system accepts it as an innovation and then shares information about it within the system and with other systems” (Wani & Ali, 2015, p.104).

### **2.2.2 The Innovation-Decision Process**

Foundational to IDT is the innovation-decision process. The innovation-decision process consists of five stages: knowledge, persuasion, decision, implementation, and confirmation (Rogers, 1983; Rogers, 1995). The innovation-decision process aims to bring attention to the idea that a consumer generally does not adopt a technological innovation right away. Instead, a consumer goes through a process that takes place over time and consists of different actions.

#### ***Knowledge Stage***

The first stage of the innovation-decision process is called the knowledge stage. In this stage, a consumer first learns about a technological innovation’s existence and gains an understanding of how it functions (Rogers, 2003). For instance, the Apple Vision Pro is ready to be released to the public in 2024. The Apple Vision Pro has the potential to positively impact professional sport insofar as it allows fans to watch games using the headset to obtain a different experience in the comfort of their homes.

Some ways in which a fan may come to first learn about this new technological innovation and how it functions can be in the form of commercials, word of mouth, social media,

and so forth. However, just because a consumer first learns about the Apple Vision Pro through social media does not mean that they will automatically adopt the technological innovation. They may go through to the second stage of the innovation-decision process, that is, persuasion.

### ***Persuasion Stage***

In this stage, a consumer forms a favorable or unfavorable attitude toward the technological innovation. How a consumer forms a favorable or unfavorable attitude depends on many factors. Suppose a consumer notices Wayne Gretzky promoting the Apple Vision Pro in a commercial. Because Gretzky endorses the product, the consumer may form a favorable attitude toward the technological innovation. At this point, the consumer still needs to decide whether to adopt the Apple Vision Pro. They have just formed a favorable attitude because of watching Wayne Gretzky promoting the Apple Vision Pro to watch hockey games. The consumer may move onto the next stage, impacting their decision to adopt the technological innovation.

### ***Decision Stage***

In the decision stage, a consumer engages in activities that lead to adopting or rejecting a technological innovation. Rogers (2003) defines adoption as “the decision to make full use of an innovation as the best course of available action” (p. 177). One of the activities consumers may engage in is observing other consumers use an innovation. For instance, a consumer may attend a birthday party and notice others use the Apple Vision Pro to watch their favourite sport team play. If the person using the innovation is an influential member with the social system, it is more likely to influence other consumers to adopt the technological innovation.

Alternatively, a consumer may walk into a mall and try on the Apple Vision Pro to get a taste of how it works. This is otherwise known as trialability based on IDT, which I will discuss in more detail in the subsequent sections. Trialability is an important construct embedded in IDT as it explains how trying out an innovation can lead to more rapid adoption (Rogers, 2003). This is a consequence of consumers' tendency to take more time to understand a technological innovation to reduce uncertainty. Thus, I use trialability as a construct in one of my research models in this dissertation to explain consumers' purchase intentions to adopt the Apple Vision Pro.

### ***Implementation Stage***

In the implementation stage, a consumer makes complete use of an innovation and puts the innovation into practice (Rogers, 2003). It is important to note that before the implementation stage, the innovation-decision process entails only a mental exercise. It is only during the implementation stage in which a consumer actually engages in behavioral change as the new innovation is used (Rogers, 1983). However, there are nonetheless feelings of uncertainty at the marginal level despite consumers using the innovation. The implementation stage and the innovation-decision process typically end when a new innovation becomes the status quo.

### ***Confirmation Stage***

Finally, in the confirmation stage, some consumers may seek confirmation on whether they made the correct decision. As such, there will be instances in which the innovation-decision process continues for some consumers after the implementation stage. If consumers obtain conflicting information, there is likelihood that consumers reject the innovation (Rogers, 2003).

Moreover, consumers may also reject the innovation if they learn about a more exciting innovation that replaces the previous innovation.

### **2.2.3 Characteristics of Innovations**

In addition to the innovation-decision process, IDT argues that the acceptance or rejection of a technological innovation is related to the technological innovation's characteristics, namely compatibility, trialability, complexity, and observability. These characteristics are regarded as antecedents to technological innovation adoption (Roger, 1995).

#### ***Compatibility***

Compatibility is a characteristic that can impact the acceptance or rejection of a technological innovation. It is defined as “the degree to which an innovation is perceived as being consistent with the existing values, past experiences, and needs of potential adopters” (Rogers, 2003, p.15). That is, consumers will be slow to adopt a new technological innovation if a technological innovation does not align with their values. Suppose fans are thinking about adopting the Apple Vision Pro. If fans believe the Apple Vision Pro would not be suitable for their lifestyle and not compatible with current trends, then it is likely that fans do not adopt the technological innovation.

Prior research revealed that there is a positive association between compatibility and technological innovation adoption (Agarwal & Prasad, 1999; Zhang et al., 2008). That is, researchers have found that compatibility is significantly associated with perceived usefulness and perceived ease of use, two of the salient factors in the technology acceptance model (Agarwal & Prasad, 1999; Hardgrave et al., 2003). Since then, more evidence has revealed a



similar conclusion (Chang & Tung, 2008; Tung, Lee et al., 2009; Wu & Wang, 2005). Thus, I include compatibility as a construct in my proposed research model to better explain why and how consumers adopt the Apple Vision Pro.

The following hypotheses were formulated:

H1<sub>a</sub>: Compatibility will have a direct positive influence on perceived usefulness of the Apple Vision Pro.

H1<sub>b</sub>: Compatibility will have a direct positive influence on perceived ease of use of the Apple Vision Pro.

H1<sub>1a</sub>: Compatibility will have an indirect positive influence on purchase intention of the Apple Vision Pro.

H1<sub>1b</sub>: Compatibility will have an indirect positive influence on attitude of the Apple Vision Pro.

### ***Trialability***

Previous studies have found a positive association between trialability and perceived usefulness and perceived ease of use (Lee et al., 2011; Yuen et al., 2021), two of the salient factors embedded in the technology acceptance model. Trialability is defined as “the degree to which an innovation may be experimented with on a limited basis” (Rogers, 2003, p. 258). In other words, if consumers get the opportunity to try out the new technological innovation, the more likely the consumer will strongly believe that the new technological innovation would be useful and easy to use.

This is partly due to consumers’ uncertainty about the new technological innovation decreasing as a result of trying it out beforehand (Rogers & Shoemaker, 1971; Tornatzky & Klein, 1982). Also, trialability is a key construct in predicting technological innovation adoption

because it allows the consumer to “establish meaning with an innovation and recognize previously unfelt needs” (Hill, 2021, p.28). Thus, I include trialability as a construct in my proposed research model to better explain consumers’ purchase intentions to adopt the Apple Vision Pro.

The following hypotheses were formulated:

H3<sub>a</sub>: Trialability will have a direct positive influence on perceived usefulness of the Apple Vision Pro.

H3<sub>b</sub>: Trialability will have a direct positive influence on perceived ease of use of the Apple Vision Pro.

H12<sub>a</sub>: Trialability will have an indirect positive influence on purchase intention of the Apple Vision Pro.

H12<sub>b</sub>: Trialability will have an indirect positive influence on attitude of the Apple Vision Pro.

### ***Complexity***

Complexity is “the degree to which an innovation is perceived as relatively difficult to understand and use” (Rogers, 2003, p. 257). In contrast to the other constructs of IDT, researchers have found that complexity is negatively associated with technological innovation adoption (Rogers, 2003). That is, the more consumers feel that using a technological innovation would require technical skills and a lot of mental effort, the less likely that they are to use the technological innovation. It is precisely for this reason why Rogers argued that innovations that are simple and do not require a lot of technical skills to use would benefit from a higher speed of adoption (Rogers, 2003). To be sure, the innovation’s rate of adoption, regarded as “the relative speed with which an innovation is adopted by members of a social system” (Rogers, 2003, p.

221), increases as each of other characteristics of innovation increases except complexity. Thus, I include complexity as a construct in my proposed research model to better explain consumers' purchase intentions to adopt the Apple Vision Pro.

The following hypotheses were formulated:

H2<sub>a</sub>: Complexity will have a direct positive influence on perceived usefulness of the Apple Vision Pro.

H2<sub>b</sub>: Complexity will have a direct positive influence on perceived ease of use of the Apple Vision Pro.

H14<sub>a</sub>: Complexity will have an indirect positive influence on purchase intention of the Apple Vision Pro.

H14<sub>b</sub>: Complexity will have an indirect positive influence on attitude of the Apple Vision Pro.

### ***Observability***

Previous research has found observability is positively associated with consumer technological innovation behaviors, albeit the strength of the association is weaker compared to the other constructs embedded in IDT (Rogers, 2003). Observability is defined as “the degree to which the results of an innovation are visible to others” (Rogers, 2003, p. 258). In other words, it is regarded as whether consumers believe using a technological innovation presents benefits. For instance, it would be far easier for consumers to see the benefits of adopting the Apple Vision Pro than new software innovations (i.e., codes). This is because the benefits of new software innovations are not easily identifiable, and as a result, it tends to have slow adoption rates (Rogers, 2003). Thus, I include observability as a construct in my proposed research model to better explain consumers' purchase intentions of the Apple Vision Pro.

The following hypotheses were formulated:

H4<sub>a</sub>: Observability will have a direct positive influence on perceived usefulness of the Apple Vision Pro.

H4<sub>b</sub>: Observability will have a direct positive influence on perceived ease of use of the Apple Vision Pro.

H13<sub>a</sub>: Observability will have an indirect positive influence on purchase intention of the Apple Vision Pro.

H13<sub>b</sub>: Observability will have an indirect positive influence on attitude of the Apple Vision Pro.

## **2.3 Technology Acceptance Model**

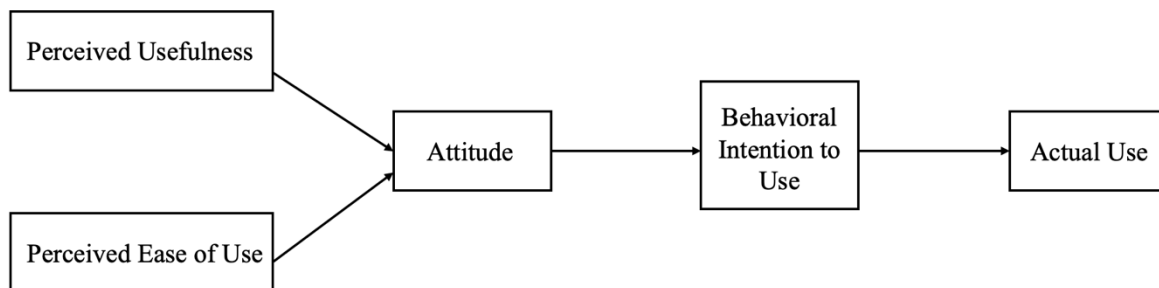
In addition to innovation diffusion theory, the technology acceptance model (TAM) has also been used widely to study technological innovation adoption. First proposed in Davis' (1989) doctoral thesis, the TAM explains why and how a user accepts a technological innovation. The TAM consists of the following core constructs that differentiates it from IDT: perceived usefulness, perceived ease of use, attitude, behavioural intention to use, and actual use. In this section, I discuss each of these constructs in more detail. I also provide a critical review of the literature on the TAM's origins, development, and its application and extension in various contexts.

### **2.3.1 The Origin and Development of the Technology Acceptance Model**

The TAM originates from the theory of reasoned action (TRA) and the theory of planned behavior (TPB) (Marangunic & Granic', 2015). Initially, researchers in the field of psychology applied the TRA and TPB to understand why consumers adopt or reject technological innovations (Marangunic & Granic', 2015). Ajzen and Fishbein's (1980) TRA started with the assumption that individuals usually make rational decisions. The goal of their theoretical model

was to predict and understand human behavior and attitudes. The TRA, fundamentally, argued that attitudes influence behavioral intention, which in turn predicts actual behaviors (Ajzen & Fishbein, 1980). Behavioral intention represents a consumer's consciously formulated plan to perform or engage in a particular behavior (Ajzen, 1991; Deci & Ryan, 1987; Sager & Menon, 1994).

Ajzen later improved the TRA by including the concept of perceived behavioral control, which resulted in a new theory called the TPB (Ajzen, 1991). The concept of behavioral control



*Figure 4. Original Technology Acceptance Model*

addressed one limitation of the TRA, namely the model's inability to account for the idea that some people may engage in a certain behavior without volitional control (Ajzen, 1991). In the new theoretical model, Ajzen (1985) showed that subjective norms and perceptions influenced

behavioral intentions in addition to attitudes. Moreover, he showed that beliefs influenced attitudes, subjective norms, and perceived behavioral control (Marangunic & Granic', 2015).

The goal of Ajzen's (1985) new TPB was to predict and understand human behavior not under an individual's volitional control. As such, researchers later attempted to use the TPB to understand consumers' behavioral intentions and actual usage of new technological innovations. However, researchers failed to produce reliable measures that could explain consumers' adoption of new technological innovations (Marangunic & Granic', 2015). For this reason, Fred Davis improved the TPB and introduced a model for technology acceptance in 1985. In his proposed conceptual model, Davis (1986) showed that external stimuli such as system features and capabilities influenced consumers' motivation, which in turn predicted actual system use (Marangunic & Granic', 2015).

Davis later improved his conceptual model and introduced the TAM by focusing on computer and information systems. In the TAM, Davis showed that consumers' motivation to use new technological innovations was explained by perceived ease of use (PEOU), perceived usefulness (PU), and attitude (Davis, 1986). Specifically, Davis (1986) showed that two major beliefs, PU and PEOU, influenced a user's attitude towards using a technological innovation, influencing their intention to use or adopt it (see Figure 6). The goal of TAM was "to provide an explanation of the determinants of computer acceptance that is general, capable of explaining user behavior across a broad range of end-user computing technologies and user populations, while at the same time being both parsimonious and theoretically justified" (Davis et al., 1989, p.15).

Davis et al. (1989) concluded that attitude only partially mediated PU. Other studies also corroborated this effect, and as such, attitude was removed because it did not fully mediate the effect of PU on behavioral intention (Venkatesh, 1999). Researchers later included behavioral intention as a new variable, which was directly influenced by perceived usefulness. The rationale was that consumers may intend to use a new technological innovation if they perceive it to be useful regardless of forming any attitude. Moreover, the TAM was later improved by including other external stimuli in addition to system design characteristics, such as user training, user participation design, and the nature of the implementation process (Marangunic & Granic', 2015).

### **2.3.2 Core Constructs of the TAM**

As mentioned above, the core constructs of the TAM include perceived usefulness, perceived ease of use, attitude, and behavioral intention. In the following section, I will elaborate more on each of these constructs.

#### ***Perceived Usefulness***

Perceived usefulness (PU) is a core construct embedded in the TAM. It is defined as “the degree to which the person believes that using the particular system would enhance her/his job performance” (Marangunic & Granic', 2015, p.85). The development of the TAM started with a conceptual model for technology acceptance. In Davis' proposed conceptual model, he showed that system features and capabilities influenced consumers' motivation, which in turn predicted actual system use (Marangunic & Granic', 2015).

Davis (1986) improved his conceptual model and introduced the construct PU. He showed that PU was a major belief that influenced the consumer's attitude to adopt new technological innovations (Davis, 1986). However, as more studies were conducted to apply the TAM in various contexts and settings, researchers found that attitude failed to fully mediate PU. As such, attitude was removed from the TAM and was replaced by behavioral intention. Researchers applied the new TAM and found that PU directly influenced behavioral intention. This suggested that consumers can adopt a new technological innovation if they perceive it to be useful regardless of forming any attitude. Over time, researchers applied and extended the TAM in unexplored contexts. In doing so, studies showed that PU is the strongest predictor of user's behavioral intention to use various technological innovations, such as augmented reality (AR) (Haugstvedt & Krogstie, 2012), digital mobile ticketing (Marquez et al., 2020), and sport team mobile apps (Kim et al., 2017), to name a few.

For instance, Haugstvedt and Krogstie (2012) created an AR application prototype application with historical photographs and information about a historical street to understand users' adoption behaviors of this application. To accomplish this goal, the researchers applied and extended the TAM by collecting data from a web survey with 200 participants that watched a short video demonstration of the AR application prototype. Also, the researchers conducted a street survey with 42 participants. The participants had the opportunity to try the AR application prototype in a live setting. The results of the study showed that PU had a direct effect on users' behavioral intention to use mobile augmented reality applications (Haugstvedt & Krogstie, 2012).



Moreover, Marquez et al. (2020) examined the factors impacting spectators' behavioral intention to use digital mobile ticketing by applying and extending the TAM. To test their proposed model, the researchers collected survey data from 523 American high school football spectators over 12 games. The results of the study showed that PU positively influenced behavioral intention to use digital ticketing (Marquez et al., 2020). Finally, Kim et al. (2017) applied and extended the TAM to explain why and how fans adopt sport team mobile apps. The researchers proposed three models and tested the models by collected from 233 sport team mobile app users in the United States. The results showed that PU had a direct effect on fans' behavioral intention to use the sport team mobile apps (Kim et al., 2017).

Thus, the following hypotheses were formulated for study 1:

H8: Perceived usefulness will positively influence attitude.

H11: Perceived usefulness will have an indirect positive influence on purchase intention.

H10: Perceived usefulness will have an indirect positive influence on attitude.

Thus, the following hypotheses were formulated for study 2:

H6: Perceived usefulness will positively influence attitude.

H9<sub>a</sub>: Perceived usefulness will have an indirect positive influence on purchase intention.

H9<sub>b</sub>: Perceived usefulness will have an indirect positive influence on attitude.

Thus, the following hypotheses were formulated for study 3:

H1<sub>a</sub>: Perceived usefulness will positively influence perceived monetary value.

H2<sub>b</sub>: Perceived usefulness will negatively influence perceived financial risk.

H8: Perceived usefulness will have an indirect positive influence on purchase intention.

H11: Perceived usefulness will have an indirect positive influence on attitude.

### *Perceived Ease of Use*

Perceived ease of use (PEOU) is a core construct embedded in the TAM. It is defined as “the degree to which the person believes that using the particular system would be free of effort” (Marangunic & Granic, 2015, p.85). It has shown to be a strong predictor of innovation adoption. Davis (1986) introduced PEOU in the original TAM, highlighting its direct effect on user attitudes toward adopting new technological innovations, which in turn, influenced purchase and behavioral intention (Davis, 1986). In other words, the more consumers believed a technology would be easy to use and free of effort, the more likely consumers were to form positive impressions about adopting the technology.

The relationship between PEOU and attitude to adopt technological innovations varies across contexts and settings. For instance, in the context of healthcare information systems, Lee and Chao (2004) found that PEOU directly affected users' intention to use electronic case histories in a hospital setting. This was consistent with a study conducted by Pai et al. (2011) that showed PEOU positively influenced users' intention to use other healthcare information systems. Similarly, Haugstvedt and Krogstie (2012) developed an augmented reality (AR) application prototype, enabling participants to test it in real time. They gathered data through an online survey where 200 participants viewed a brief video demonstration of the AR prototype. Additionally, they conducted a street survey involving 42 participants. Their research revealed

that PEOU significantly influenced the consumers' intention to adopt mobile augmented reality application. Finally, Ha et al. (2017) investigated factors influencing sport fans' behavioral intention to use smartphones in the sport consumption context. The researchers collected survey data from 189 students at two large Midwestern Universities to test their extended TAM model. The findings showed that PEOU positively influenced students' behavioral intention to use smartphones for sport consumption (Ha et al., 2017).

While PEOU is often considered the second strongest predictor of behavioral and purchase intentions to use technology (Marangunic & Granic, 2015), its impact can differ. That is, some studies have found that PEOU influences purchase and behavioral intentions without the mediating role of attitude, suggesting a more direct pathway to innovation adoption. This underscores the importance of the context and setting in terms of understanding PEOU's influence related to innovation adoption. Thus, the following hypotheses are proposed for this study:

Thus, the following hypotheses were formulated for study 1:

H1<sub>a</sub>: Perceived ease of use will positively influence perceived usefulness.

H1<sub>b</sub>: Perceived ease of use will positively influence attitude.

H13: Perceived ease of use will have an indirect positive influence on purchase intention.

H16: Perceived ease of use will have an indirect positive influence on attitude.

Thus, the following hypotheses were formulated for study 2:

H1<sub>a</sub>: Perceived ease of use will positively influence perceived usefulness.

H1<sub>b</sub>: Perceived ease of use will positively influence attitude.

H13: Perceived ease of use will have an indirect positive influence on purchase intention.

H16: Perceived ease of use will have an indirect positive influence on attitude.

Thus, the following hypotheses were formulated for study 3:

H2<sub>a</sub>: Perceived ease of use will positively influence perceived monetary value.

H2<sub>b</sub>: Perceived ease of use will negatively influence perceived financial risk.

H9: Perceived ease of use will have an indirect positive influence on purchase intention.

H10: Perceived ease of use will have an indirect positive influence on attitude.

### *Attitude*

In the TAM, attitude toward using technology is regarded as a strong predictor of technology acceptance and usage (Davis, 1986). The TAM shows that perceived usefulness and perceived ease of use, two of its salient constructs, are consequential in terms of shaping a consumers attitude towards adopting a technology (Davis, 1986). In this model, attitude refers to the users' positive or negative feelings adopting a technology (Ajzen, 1991). Studies have consistently shown that a favourable attitude towards a technology leads to a higher likelihood of adopting the technology (Karahanna et al., 1999; Kim et al., 2017). For instance, Karahanna et al. (1999) examined the differences in individuals' beliefs and attitudes before and after adopting information technology (IT). The researchers integrated innovation diffusion theory and the technology acceptance model to investigate these differences, particularly in the context of Windows technology in an organizational setting.

Karahanna et al. (1999) found that potential consumers' intention to adopt IT is determined by normative pressures, while existing consumers' intention is strongly based on their attitude. That is, before consumers adopt the technology, they form their attitudes on a

variety of innovation characteristics (i.e., perceived usefulness, perceived ease of use, trialability). Similarly, in another study by Kim et al. (2017), the researchers investigated consumer responses to smart in-store technology using the technology acceptance model and found that attitude partially mediated the relationship between TAM beliefs and behavioral intention to adopt the technology. However, attitude has received minimal research attention from researchers who have applied the technology acceptance model in sport contexts. Thus, the following hypothesis was formulated:

H10: Attitude will positively influence purchase intention.

### ***Behavioral Intention / Purchase Intention***

Based on the theory of reasoned action (TRA) and the theory of planned behavior (TPB), behavioral intention is a construct that is viewed as “a person’s motivation in the sense of her or his conscious plan or decision to exert effort to enact the behaviour” (Conner & Armitage, 1998, p. 1430). Researchers have applied and extended the TRA and TBP to understand a variety of sport consumer behavior, including technological adoption.

For example, Cunningham and Kwon (2003) examined individuals’ behavioral intentions to visit a live sporting event. Other researchers have applied and extended the TRA and TBP to understand individuals’ behavioral intentions to purchase products/services from a sport event sponsor (Gwinner & Bennett, 2008; O’ Reilly et al., 2008); individuals’ behavioral intentions to travel to a country that has previously hosted the Olympics (Kaplanidou, 2006; Shonk & Chelladurai, 2008); individuals’ behavioral intentions to participate in sport and physical activity

(Courneya, 1994); and finally sport consumers' behavioral intentions to adopt technological innovations (Song et al., 2018).

In doing so, researchers have repeatedly found that behavioral intention is the strongest predictor of actual behavior (Ajzen, 1991; Ajzen, 2005; Montano & Kasprzyk, 2002; Sutton, 1998), which was consistent with researchers using the TAM and related models (Marangunic & Granic, 2015).

Ajzen (2005) commented on the process by which behavioral intentions turn into actual behaviors by stating:

A person forms an intention to engage in a certain behaviour. This intention remains a behavioral disposition until, at the appropriate time and opportunity, an attempt is made to translate the intention into action. Assuming that the behaviour is in fact under volitional control, the attempt will produce the desired act. (p. 99).

It is important to note, however, that behavioral intention strongly predicts actual behavior usually when behavioral intentions are stable in the gap between its assessment and observation of the behavior (Ajzen, 1991, 2005). This is because unexpected events will likely change a consumer's intention to perform a particular behavior. For example, a sport fans purchase intention of the Apple Vision Pro might change after learning that the Apple Vision Pro is deleterious to an individual's health weeks before using the headset at a game.

As such, researchers and practitioners should be aware that purchase intention measures taken before the changes happen do not strongly predict a person's actual behavior (Ajzen, 2005). Put differently, the predictive power of purchase intention of actual behavior weakens as the amount of time between measurement of purchase intention and observation of the actual behavior increases (Ajzen, 2005). In this dissertation, I do not include actual usage in my

proposed research model. Instead, I use purchase intention as the outcome variable because prior research shows that purchase intention can predict actual usage of technological innovations, granted that the TAM is applied and extended in contexts that have already been validated (Turner et al., 2010).

### **2.3.3 Application and Extension of the TAM**

The TAM has been empirically validated and supported in various contexts, including sport (Hur et al., 2012; Kim et al., 2017; Marquez et al., 2020; Tseng et al., 2012; Van der Heijden, 2004). Venkatesh and Davis (2000) applied and extended the TAM in the context of manufacturing firms, financial services, and pest management, to name a few. In doing so, Venkatesh and Davis (2000) showed other variables influencing perceived usefulness. Using four different technological innovations at four organizations, Venkatesh and Davis (2000) collected longitudinal data to show that social processes (subjective norm, image, voluntariness) and cognitive instrumental processes (job relevance, output quality, result in demonstrability, and PEOU) influenced PU. The researchers also showed that subjective norm, PU, and PEOU directly influenced behavioral intention to use (Venkatesh & Davis, 2000).

Because the findings were strongly supported for all four organizations, the researchers called their new extended model TAM 2. Researchers applied TAM 2 to study the adoption of various new technological innovations. For instance, researchers applied the TAM2 to investigate factors influencing farmers' adoption of biological control (Sharifzadeh et al., 2017). The researchers found that the TAM2 explained 78% of the variance in behavioral intention of farmers to use biological control and 82% of the variance in actual use (Sharifzadeh et al., 2017).

However, based on most of the studies that applied and extended the TAM, Venkatesh and Davis (2000) revealed that the TAM usually explained only 40% of behavioral intentions. Meister and Compeau (2002) also revealed that the TAM generally explained only 30% of usage behavior.

Because the TAM 2 better explained behavioral intention to use other technological innovations, it slowly became one of the most influential theories (Marangunic & Granic, 2015). However, it still presented opportunities to provide a stronger explanation for consumers' adoption of technological innovations (Legris et al., 2003; Plouffe et al., 2001). As a result, researchers continued to apply and extend the model to include concepts such as perceived enjoyment (PE) and perceived trust (PT) to predict adoption behaviors. PE is defined as "fun or pleasure derived from using a technology" (Venkatesh et al., 2012, p. 161). And PT is generally regarded as the extent to which users perceive the technological innovation to be trustworthy, honest, and sincere in their promises (Eastlick et al., 2006; Koufaris & Hampton-Sosa., 2004).

New factors and variables were later included in the TAM and TAM 2 that could be grouped into (1) factors from related models (i.e., subjective norm, perceived behavioral control, self-efficacy), (2) additional belief factors (trialability, visibility, result demonstrability, concern richness, etc.), (3) external variables (i.e., personality traits, demographic characteristics, etc.). In doing so, it gave rise to a new model called the unified theory of acceptance and use of technology (UTAUT) (Venkatesh et al., 2003). The UTAUT identifies four key factors (i.e., performance expectancy, effort expectancy, social influence, and facilitating conditions) and four moderators (i.e., age, gender, experience, and voluntariness). These factors and moderators were



shown to predict behavioral intention to use a technological innovation primarily in an organizational context (Venkatesh et al., 2016).

Researchers then sought to enhance the extended models' applicability primarily in the context of computer and information technology (Hu et al., 2005). In doing so, four major categories of modifications were made: external predictors (i.e., technology anxiety, prior usage and experience, self-efficiency), factors from other theories (i.e., subjective norm, expectations, user participation), contextual factors (i.e., gender, cultural diversity, technology characteristics), and usage measures (i.e., attitude toward technology, usage perception, and actual usage of technology). Researchers have also applied the extended and enhanced TAM models to other contexts and technological innovations, such as e-learning, business simulation games, m-learning, and sport (Marangunić & Granić, 2014).

#### **2.3.4 Application and Extension of the TAM in Sport Contexts**

The validity of the TAM has been verified in many contexts and settings, including sport (Hu et al., 2015). Researchers in sport management have applied and extended the TAM and related models (i.e., TAM 2, UTAUT, TAM 3) to understand consumers' adoption behaviors of technological innovations (see Figure 4, Figure 5, Figure 6). For instance, Marquez et al. (2020) investigated American high school football spectators' behavioral intention to use digital ticketing. The researchers applied and extended the TAM to include two previously overlooked variables: trust of digital ticketing and willingness to pay convenience fees. The findings showed that these two factors influenced perceived usefulness, which significantly affected American

high school football spectators' behavioral intention to adopt digital ticketing (Marquez et al., 2020).

In another study by Ha et al. (2017), the researchers investigated consumers' behavioral intention to adopt smartphones since smartphones have become an important tool for enhancing the fan experience. The researchers included sport-related factors such as sport involvement and commitment to reveal sport's uniqueness. Other factors, such as perceptions toward smartphones and smartphone-specific factors, were also included. These categories (sport-related factors, perceptions toward smartphones, and smartphone-specific factors) explained 79.4 percent of the variance (Ha et al., 2017). Finally, in another study by Kim et al. (2017), the researchers investigated sport fans' behavioral intention to adopt and use sport team apps. The researchers applied and extended the TAM by including consumer innovativeness, a construct previously overlooked. The findings showed that consumer innovativeness, directly and indirectly, influenced behavioral intention through beliefs about sport team apps.

Despite early work in the sport management literature explaining why and how sport consumers adopt technological innovations such as digital ticketing, smartphones, and sport team mobile apps, there is a need to learn more about this phenomenon since researchers have overlooked other sport contexts. Specifically, researchers have overlooked the Apple Vision Pro. Examining sport fans' purchase intentions of the Apple Vision Pro is important because there is early discussion that it can positively impact the fan experience.

**Table 1. Applications of the TAM in Sport Management Research**

Title	Author(s)	Journal	Context	Main Findings/Conclusions
Factors affecting spectators' adoption of digital ticketing: the case of interscholastic sports	Marquez et al. (2020)	International Journal of Sports Marketing and Sponsorship	Digital ticketing	The researchers found that trust of digital ticketing, willingness to pay a convenience fee, and perceived ease of use influenced perceived usefulness of digital ticketing. In turn, it influenced intention to use. Willingness to pay fees also had a direct effect on intention.
A Gratification Model of Sport Team Mobile Application Usage	Hwang et al. (2020)	Sport Marketing Quarterly	Sport Team Mobile Apps	The researchers found that Information Seeking, Convenience, Economic Incentives, Entertainment, Fantasy, Curiosity, and Parasocial) influenced Continuance Intention. The researchers also found moderating effects—exerting the relationship between motivations and continuance intention—by gender and age.
Understanding users' continuance intentions to use smart-connected sports products	Song et al. (2018)	Sport Management Review	Smart-connected sports products (i.e., wristband type activity trackers)	The researchers found that perceived usefulness and perceived comfort influenced attitudes toward using the wristband activity tracker. The

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				researchers also found that technical functionality and facilitating conditions influenced regulating users' volitional behaviors from their intentions.
The Effects of Consumer Innovativeness on Sport Team Applications Acceptance and Usage	Kim et al. (2017)	Journal of Sport Management	Sport Team Mobile Apps	The researchers found that consumer innovativeness had direct and indirect influences on behavioral intention through beliefs about sport team apps.
Sport fans in a "smart sport" (SS) age: drivers of smartphone use for sport consumption	Ha et al. (2017)	International Journal of Sports Marketing and Sponsorship	Smartphones	The researchers found that roughly 79.4 percent of variance in the usage intention was explained by the three categories of the variables, namely sport-specific factors, perceptions toward smartphone, and smartphone-specific factors.
Using an extended technology acceptance model in exploring antecedents to adopting fantasy sports league websites	Kwak & McDaniel (2011)	International Journal of Sports Marketing and Sponsorship	Fantasy sports league websites	The researchers found that consumers' behavioural intentions towards playing fantasy football were influenced by attitude toward the televised sport (American professional football), perceived ease of use, perceived knowledge, and subjective norms.

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### **2.3.5 Why Was the Original TAM Selected**

The original TAM was selected for this dissertation primarily because of its simplicity and parsimony. Because the original TAM only consists of several constructs (i.e., perceived ease of use, perceived usefulness, attitude, behavioral intention), it allowed for a concise testing of hypotheses related to understanding why and how fans develop intentions to purchase the Apple Vision Pro. That is, using a parsimonious model avoided the complexity of testing additional constructs that may have made it difficult to interpret the relationships between variables and understand the direct and indirect effects. Moreover, the original TAM was selected because of the context of this dissertation. Because the Apple Vision Pro is a new technology and because it has yet to be studied using the TAM, it was important for me to establish a baseline understanding of the salient factors influencing fans' intentions to purchase the Vision Pro. Finally, the original TAM was selected because I wanted to take a step-by-step approach to understanding these phenomena. It was sensible to have future studies that use TAM2, TAM3, and so forth after a foundational understanding was developed.

### **2.3.6 Criticisms of the TAM**

One of the criticisms of the TAM is that researchers tend to recruit students as participants in controlled environments (Lee et al., 2003). While recruiting students presents many advantages, students are not representative of the entire population and therefore researchers have advocated for future research to include diverse samples (Marangunic & Granic, 2015). Generally speaking, students tend to be younger, more educated, have lower income, and are more technologically savvy compared to other populations. The results from

these studies make it difficult to generalize to the entire population (Lee et al., 2003). To address this criticism, I include older adults in my sample by using Prolific to recruit participants.

Another criticism is that most studies use self-reported data to measure system use instead of actual system use (Chuttur, 2009). The difference between measuring system use instead of actual system use is such that the former assumes that it will lead to the latter, which is not always the case (Chuttur, 2009). Because self-reported data is susceptible to social desirability bias, researchers argue it is an unreliable measure of actual system use (Legris et al., 2003; Yousafzai et al., 2007). Respondents are likely to report their thoughts and feelings to conform to societal expectations (Neuman & Robson, 2012), which may distort our understanding of whether consumers will use new technological innovations.

Researchers also argue that intention to use a new technological innovation does not always predict actual use because “the time period between intention and adoption could be full of uncertainties and other factors that might influence an individual’s decision to adopt a technology (Chuttur, 2009, p. 17). To be clear, in this dissertation I rely on self-reported data to make conclusions about my research questions despite the possibility that consumers’ purchase and behavioral intentions would not always lead to actual system use. As such, the results of this dissertation should be interpreted with that in mind.

Finally, most studies that apply and extend the TAM investigate consumers’ behavioral intentions to adopt technological innovations through voluntary use (Yousafzai et al., 2007). Voluntary use of a new technological innovation means that the user has a choice and is not forced to use the technological innovation. Because in the real world organizations likely make it

mandatory for consumers to adopt technological innovations, most of the studies do not reflect what is currently taking place in reality. In this dissertation, I examine emerging technological innovations that are not mandatory for fans to adopt. The Apple Vision Pro under examination in this dissertation is a technological innovation that elicits voluntary use.

## **2.4 Team Identification**

The concept of team identification originates from social identity theory, regarded as how the subjective perception of the self is perceived by others (Funk et al., 2022; Brown, 2000). Social identity theory (SIT) has made notable contributions in four key areas, namely in-group bias, responses to status inequality, intragroup homogeneity and stereotyping, and changing intergroup attitudes through contact (Brown, 2000). Specifically, SIT has helped inform our understanding of why a group prefers itself (in-group) over other groups (out-group). This preference reveals itself in different ways, such as the approaches individuals use to perceive, assess, and engage with members of their own group compared to those from different groups (Brown, 2000).

It is important to note that identity consists of two components. The first component is a personal identity, a type of identity in which individuals compare their personal characteristics to separate themselves from others who do not possess those characteristics (Goldberg, 1992). The second component is group identity, a type of identity in which individuals possess a social identity resulting from their relations with referent groups such as sports teams (Ashmore et al., 2004). To be sure, individuals align themselves with various groups throughout their lives, encompassing a broad spectrum of categories such as demographics (i.e., gender, race, age) and

memberships in various organizations (i.e., religious groups, political parties, sports teams). Whereas certain group affiliations, like one's gender or race, play a consequential and everyday role in a person's life, others such as sports identities are more symbolic. This means that symbolic social identities require ongoing reaffirmation to maintain our sense of belonging to these groups (Billig, 1995).

Because sports identities are symbolic social identities, sport organizations continuously implement marketing and behavioral strategies to maintain fans' sense of belonging to their sports teams. For instance, the Toronto Raptors have a mobile app in which fans can request to arrange a visit during the Raptors game if they are celebrating a birthday, first game, or anniversary. The Raptors fan engagement representatives ensure that fans get an unforgettable experience with a personalized in-seat visit. This is an important pursuit since researchers have found that highly identified spectators tend to be more emotionally involved with a sports team and are more likely to attend and watch games compared with less identified spectators (Underwood et al., 2001). In doing so, it helps sport organizations grow their bottom line. However, it is also the case that sport fans benefit from the ongoing reaffirmation of sports organizations to maintain their sense of belonging to their sports teams because fans' connection with other spectators has been associated with civic engagement (Ashmore et al., 2004), psychological well-being (Sellers et al., 2003), and interpersonal relationships (Ashmore et al., 2004).

Researchers regard the central tenants of social identity theory in the context of sport with a concept known as team identification, defined as "the degree to which a consumer feels a sense



of belonging to and connection with other spectators and fans of a sports team” (Funk et al., 2022, p.229). Similarly, Branscombe and Wann (1992) defined it as “ the extent to which individuals perceive themselves as fans of the team, are involved in the team, are concerned with the team's performance, and view their team as a representative of themselves” (p. 3).

Researchers have examined the role team identification plays in a variety of sport consumer behaviors. For instance, Morrison et al. (2020) investigated the role of team identification as a potential mediator between spectators’ perceptions of a Major Junior Hockey team’s corporate social responsibility initiatives and their patronage behaviors. The researchers found that team identification partially explains the relationships between awareness and affective evaluations and the different types of patronage behaviors (Morrison et al., 2020).

Moreover, Gray and Wert-Gray (2011) examined the impact of team identification on several fan consumption behaviors, namely in-person attendance, media-based attendance, and purchase of team merchandise. The researchers found that team identification significantly influenced fan consumption behaviors (Gray & Wert-Gray, 2011). As such, Gray and Wert-Gray (2011) suggested that sport organizations can reap benefits from bonding with their fans compared to focusing on improving the team’s competitive performance in order to increase fan consumption behaviors. Finally, James and Trail (2008) proposed a research model to study the relationships among team identification, attendance intentions, and other consumption intentions. After testing their proposed research model, the researchers showed that team identification had both direct and indirect effects on sport consumption intentions.

Most of the previous studies that have examined the role team identification plays in sport consumer behavior have predominately used a one-dimensional measure. In this study, I use a multidimensional measure of team identification to better understand its complex, multifaceted nature. It consists of the following identity dimensions: private evaluation, public evaluation, sense of interdependence with the group, interconnection of self with the group, behavioral involvement, cognitive awareness. Private evaluation reflects the personal feelings of consumers regarding their association with a group, while public evaluation pertains to how outsiders view the group, a concept akin to group status (Heere et al., 2013). Moreover, interdependence with the group shows how much a consumer's well-being is believed to be linked to the group's well-being, while interconnection of self with the group indicates the degree to which a consumer identifies with and considers the group as an integral part of their identity. Moreover, behavioral involvement denotes the level of personal participation in group-related activities, while cognitive awareness examines a consumers' understanding of a specific organization.

Thus, the following hypotheses were formulated:

H1<sub>a</sub>: Private evaluation will positively influence perceived usefulness.

H1<sub>b</sub>: Private evaluation will positively influence perceived ease of use.

H13: Private evaluation will have an indirect positive influence on purchase intention.

H16: Private evaluation will have an indirect positive influence on attitude.

H2<sub>a</sub>: Public evaluation will positively influence perceived usefulness.

H2<sub>b</sub>: Public evaluation will positively influence perceived ease of use.

H14: Public evaluation will have an indirect positive influence on purchase intention.

H18: Public evaluation will have an indirect positive influence on attitude.

H3<sub>a</sub>: Sense of interdependence with the group will positively influence perceived usefulness.

H3<sub>b</sub>: Sense of interdependence with the group will positively influence perceived ease of use.

H19: Sense of interdependence with the group will have an indirect positive influence on purchase intention.

H17: Sense of interdependence with the group will have an indirect positive influence on attitude.

H4<sub>a</sub>: Interconnection of self with the group will positively influence perceived usefulness.

H4<sub>b</sub>: Interconnection of self with the group will positively influence perceived ease of use.

H20: Interconnection of self with the group will have an indirect positive influence on purchase intention.

H21: Interconnection of self with the group will have an indirect positive influence on attitude.

H5<sub>a</sub>: Behavioral involvement will positively influence perceived usefulness.

H5<sub>b</sub>: Behavioral involvement will positively influence perceived ease of use.

H22: Behavioral involvement will have an indirect positive influence on purchase intention.

H23: Behavioral involvement will have an indirect positive influence on attitude.

H6<sub>a</sub>: Cognitive awareness will positively influence perceived usefulness.

H6<sub>b</sub>: Cognitive awareness will positively influence perceived ease of use.

H24: Cognitive awareness will have an indirect positive influence on purchase intention.

H25: Cognitive awareness will have an indirect positive influence on attitude.

## 2.5 Perceived Monetary Value

Perceived monetary value, an important concept in consumer behavior, can be defined as the extent to which consumers perceive whether a technology is reasonably priced in relation to its perceived benefits (Baishya & Samalia, 2020). It is a multidimensional construct comprised of price and perceived value (Dodds et al., 1991), which is reflected in the measurement of perceived monetary value (Kim et al., 2008; Kang & Maity, 2012). Unlike organizational settings in which organizations typically pay for new technological innovations that employees can use, individual consumer settings require consumers to use their disposable income to purchase (Venkatesh et., 2012). When consumers use their disposable income, it is more likely that consumers purchase a new technology when they perceive more benefits than costs (Monroe & Krishnan, 1985). This suggests that perceived benefits should exceed perceived costs for a purchase to take place, that is, perceived monetary value should be positive (Monroe & Krishnan, 1985).

As such, the cost of the technology and its perceived benefits are important considerations before a consumer decides to use their disposable income to purchase. The cost of the technology is especially noteworthy when consumer financial constraints arise (Hart & London, 2011). For instance, the Apple Vision Pro was just released to the public in the United States of America at a cost of roughly \$3,500 (Apple, 2023). However, a vast proportion of the population may be unable to afford the Vision Pro as the cost of the technology far exceeds their disposable income to purchase. That is, regardless of whether consumers perceive this technology to significantly enhance their fan experience or not, the financial constraint makes their purchase of the Vision Pro a distant reality. Because the Vision Pro is a non-essential

product, meaning it is not something consumers need for their survival, consumers in low-income populations are more likely to spend their disposable income on basic needs than the Vision Pro (Baishya & Samalia, 2020). Alternatively, consumers who do have the means to purchase the Vision Pro may not be held back by the cost as much, however the question of whether the Vision Pro would offer value for money is of great importance.

Previous studies have examined the role perceived monetary value plays in innovation adoption behaviors, primarily in the service industry (Boksberger & Melsen, 2011). The concept of perceived value gained popularity as marketers realized its importance in consumer decision-making, especially after Holbrook's (1999) work on consumer value in which it revealed the role of perceived value in services. He defined these relational exchanges as giving something up of value for something of greater value (Holbrook, 1999).

Throughout the years, researchers have found that perceived monetary value increases an individual's intention to adopt a product or service (Cronin et al., 2000; Dodds et al., 1991; Zeithaml, 1988). For instance, Cronin et al. (2000) examined how service quality, perceived monetary value, and customer satisfaction influences consumer behavior in service settings, including spectator sports, participative sports, entertainment, health care, and fast food. The researchers found that these constructs all directly influence behavioral intentions, emphasizing the importance of each construct in influencing consumer behavior. Moreover, Dodds et al. (1991) investigated how extrinsic cues such as price, brand, name and store name influences consumers' perceptions of product quality, value, and their willingness to buy. The researchers found that price positively influenced perceived product quality. Conversely, Dodds et al. (1991)

found that price negatively influenced perceived value and willingness to pay. This suggests that although higher prices can enhance perceptions of quality, they can also diminish perceived monetary value and discourage purchase intentions (Dodds et al., 1991).

Contrastingly, Shaw and Sergueeva (2019) applied and extended the unified theory of acceptance and use of technology (UTAUT2), a variant of the original technology acceptance model, by including perceived value to better understand consumers' intention to use smartphones for mobile commerce. In this context, the researchers did not include perceived value of the technology in terms of revealing its monetary value. Instead, the researchers included perceived value to represent the value of an IT artifact that has no direct costs associated with it (Shaw & Sergueeva, 2019). They found that perceived value significantly influenced consumers' intention to use, highlighting the importance of perceived monetary value in innovation adoption. More recently, Liu et al. (2015) examined the role of perceived value in explaining consumers' acceptance of mobile coupon applications. The results of their study showed that perceived value positively impacted consumers' acceptance of the innovation, suggesting that perceived value plays an important role innovation adoption behaviors. However, the examination of this construct in sport contexts remains limited. This study, therefore, aims to bridge this gap by including perceived monetary value to understand sport consumers' purchase intentions of the Apple Vision Pro. The following hypotheses were formulated for study 3 of this dissertation.

H5: Perceived monetary value will have a direct, positive influence on attitude.

H7: Perceived monetary value will have an indirect, positive influence on purchase intention.

## **2.6 Perceived Financial Risk**

Perceived financial risk plays a consequential role in consumer behavior (Conchar et al., 2004; Currás-Pérez & Sánchez-García, 2012). Perceived financial risk refers to “the consumer's perceptions of the uncertainty and adverse consequences of buying a product or service” (Dowling & Staelin, 1994, p. 119). Because technological innovations like the Apple Vision Pro are expensive financial investments, understanding the complexity of perceived financial risk is important for examining consumer behavior in this context. To be sure, perceived financial risk does not only refer to the potential monetary loss of the immediate cost of purchase but also includes potential future costs such as maintenance or obsolescence. For instance, the Apple Vision Pro costs roughly \$3,500 but may also include additional costs for warranty and damaged product expenses later on in the lifecycle of the product (Apple, 2023).

Several studies have highlighted the impact of perceived financial risk on consumer behavior. For instance, Agarwal and Teas (2001) explored the relationship between extrinsic cues (i.e., price, brand, store name, and country-of-origin), perceived quality, perceived sacrifice, and perceived financial risk, and consumers’ perceptions of product value. The researchers conducted two experiments with 530 undergraduate students to test their hypothesized model and found that perceived quality and perceived sacrifice mediated the relationships between extrinsic cues and perceived financial risk. Moreover, the researchers found that perceived financial risk mediated the relationships between perceived quality and perceived sacrifice with perceived value. This means that both perceived performance risk and perceived financial risk can be reduced if perceived quality is high. The findings also suggest that perception of product value is

influenced by risks associated with the product. As a result, the researchers argue that it is sensible for firms to enhance consumers' perceptions of quality through brand name, store, country-of-origin, and price.

In another study by Shapiro et al. (2019), the researchers tested their conceptual model to examine the relationships between fan identification, perceived value, and purchase intentions, in addition to the moderating role of perceived financial risk. The findings revealed that perceived financial risk failed to moderate the relationship between perceived value and purchase intention, suggesting that for the sample of combat sport consumers recruited for the study, the financial risk associated with purchasing pay-per-view events does not significantly change the impact of perceived value on their purchase intentions.

Moreover, the relationship between perceived financial risk and other TAM constructs has received minimal research attention. I hypothesize that when consumers perceive the Apple Vision Pro as highly useful and easy to use, it may mitigate some of the concerns related to financial risk, which in turn could lead to more favourable attitudes and higher purchase intentions. It is important to note that the influence of perceived financial risk on consumer behavior and decision-making extends beyond the initial purchase decision. It also includes concerns about the long-term value of the technological innovation, potential resale value, and the cost of alternatives. This can especially be the case in rapidly changing technology markets such as the Apple Vision Pro where new versions of this product are expected to be released in the future. Given the importance of perceived financial risk in technology adoption, especially in



the context of expensive and non-essential products like the Apple Vision Pro, the following hypotheses are formulated:

H3: Perceived financial risk will have a direct, negative influence on perceived monetary value.

H4: Perceived financial risk will have a direct, negative influence on attitude.

H7: Perceived financial risk will have an indirect, negative influence on purchase intention.

## **2.7 Summary**

To summarize, in this chapter I review the literature on the core constructs of the TAM, core constructs of IDT, team identification (a sport-related factor), perceived monetary value, and perceived financial risk. The literature shows that perceived ease of use (PEOU) and perceived usefulness (PU) are the strongest constructs influencing purchase intention.

## **Chapter 3**

### **Method (Study 1)**

#### **3.1 Chapter Overview**

This study aimed to explore the factors influencing sport consumers' purchase intentions of the Apple Vision Pro. In this chapter, I split the method section into three sections for each study. Each method section for each study consists of the measures and data analysis subsections. Because the study context, participants and design, sampling strategy, and procedure are the same for all three studies, I will only discuss these subsections in study 1.

#### **3.2 Epistemological Approach**

In this dissertation, I take a post-positivist approach because I subscribe to the central tenants of this philosophical worldview. Post-positivism is “a set of beliefs and feelings about the world and how it should be understood and studied” (Guba, 1990, p. 17). The philosopher Karl Popper published his ideas in the book, *Conjectures and Refutations: The Growth of Scientific Knowledge*, which influenced how post-positivists view the world today.

Unlike positivists, who established scientific knowledge based on observation and experimentation, Popper viewed scientific knowledge based on a continuing process of conjecture and falsification (Crotty, 1998). He detested the positivist idea that major advancements in scientific knowledge were to make a discovery and then prove it right. Popper did not believe in absolute truths and the idea of proving a theory. Instead, he believed that major advancements in scientific knowledge are about scientists making a hypothesis and then being unable to prove the hypothesis wrong (Crotty, 1998).

In other words, Popper challenged our previous understanding of the scientific method because it emphasized induction, a process in which a general law is established by gathering enough evidence of an event taking place repeatedly (The Stanford Encyclopedia of Philosophy, 2018). For instance, because we wake up every morning and see the sun rise time and time again, we feel confident to classify this as a “fact” based on a universal law of physics. However, Popper believed that just because you always see the sun rise does not mean one day it will not rise.

Another prominent philosopher David Hume argued that the problem with induction is that we assume the consistencies we observe today will remain unchanged in the future. For this reason, Popper insisted that we shift the focus on the scientific method from verification to falsification. Popper’s principle of falsification is the idea that the scientific method should be to engage in observation and experimentation and try not to prove a theory, for scientists can never do that, but instead try to disprove. Popper further argued that it is the ability to employ the principle of falsification that differentiates scientific claims from pseudo-scientific claims (Crotty, 1998).

Moreover, arguments were made from other philosophers that human beings are fundamentally fallible, and therefore dealing with absolute truths is a dangerous way to approach things. Today, generally speaking, post-positivists view the world as follows: (1) how we know what we know is through objectivism, (2) truth can be agreed upon and measured, and (3) bias needs to be controlled since it impairs our understanding of truth. As such, in this dissertation I

use language such as “association”, “factor”, “generalizability”, “reliability”, “validity”, “hypothesis”.

Another important belief post-positivists hold is the idea of causal inference, that is, post-positivists believe the world works based on cause-and-effect relationships or causation. Based on our understanding of causation and other beliefs post-positivists hold, in this dissertation I use the scientific method developed by Francis Bacon to explore different research questions using a quantitative methodology.

### **3.3 Study Context**

The Apple Vision Pro is a mixed reality headset that can be worn on the face, projecting its output directly into the user’s eyes through high resolution displays unlike traditional computers (Gans & Nagaraj, 2023). There are several notable features of Apple’s new device that makes it stand out from similar technologies such as the Google glass or Meta’s Quest Pro. That is, the Apple Vision Pro can transform any physical space into a digital canvas, allowing sport fans to watch their favorite sport teams play on a large display setup without the need of large physical screens (Apple, 2023). Fundamentally, it is an immersive way to experience watching sports as fans can expand sport highlights, sport games, sport video games, and more to their own personal theater while feeling like they immersed in the game with Spatial Audio. The Apple Vision Pro is set to be sold to the general public in the United States of America at a cost of roughly \$3,500 in February 2024 (Gans & Nagaraj, 2023). It highlights a new frontier in computing, offering an unimpeded 3D screen experience and shows early potential to

revolutionize how sport fans interact with digital information in the physical world (Gans & Nagaraj, 2023).

There are several reasons why the Apple Vision Pro was selected as the focus for this dissertation. One reason is because of the timing of the release of the Apple Vision Pro and since it represents the latest in mixed reality technology. It was important to keep up with the latest industry developments. The second reason is because of Apple's strong brand recognition and established reputation for innovation. Because of its strong brand recognition, there is a possibility that the Vision Pro could be a highly influential product. The final reason why the Vision Pro was selected is because it shows great potential to positively enhance the fan experience compared to other technological innovations given its unique features and benefits that appeal to sports fans.

### **3.4 Participants and Design**

Study 1 examined the role team identification plays in consumers' purchase intentions of the Apple Vision Pro. In study 1, a total of 272 American participants were recruited from Prolific to complete an online questionnaire designed through Qualtrics. Most of the participants reported being single (46.70%) with a high school education (43%). Participants received \$2 for completing the questionnaire.

### **3.5 Sampling Strategy**

In this study, I use a non-probability sampling strategy, namely convenience sampling. The sample for all three studies in this dissertation was American sports fans and the population was sports fans. In this dissertation, however, I did not include a representative sample. As such,

the results from this dissertation cannot be generalized to all sports fans. Rather, the practical implications from this dissertation only apply to American sports fans and North American professional sport organizations and teams since I used a nonprobability sampling method to target this specific sample.

A convenience sampling technique involves recruiting participants due to their proximity and accessibility (Neuman & Robson, 2012). I used this sampling technique because of the advantages that it presented, namely that it was less time-consuming and relatively inexpensive to recruit participants compared to the other sampling techniques (Neuman & Robson, 2012). I also used a convenience sampling technique because it allowed me to reach a target market that I was interested in recommending targeted marketing and behavioral strategies for. This target market appealed to me because I have a personal connection and insider knowledge to North American professional sport organizations and teams.

While there are advantages of using a convenience sampling technique, there are also disadvantages, one of which is it increases the likelihood of sampling biases (Alvi, 2016). In order to address this issue, I followed best practices put forward by researchers in recruiting participants from Prolific. I discuss these best practices in more detail in the subsequent sections. Finally, the desired sample size for all three studies in this dissertation was calculated using G\*Power 3.1.9.4 (Faul et al., 2007) and keeping in mind that a sample size of less than 200 is likely to affect the stability of an SEM study (Wang et al., 2018).

Based on the information that I provided to G\*Power 3.1.9.4 (i.e., type of statistical test, type of power analysis, etc.), it showed that I would need a sample size of roughly 220

participants for each study. Irrespective of a well-designed questionnaire, there is a possibility of incomplete questionnaires and skipped questions provided by participants (Gagnon, 2020). I managed this issue by recruiting more participants than the desired sample size obtained from using G\*Power 3.1.9.4. The sample in this study was larger than 200 and is therefore suitable for SEM study.

### **3.6 Data Collection**

To test my proposed research models, I collected data through Prolific Academic. Prolific Academic is an online crowdsourcing platform that has been previously used by researchers for behavioral studies in a variety of contexts and settings (Tandon et al., 2021; Tandon et al., 2022). There are several reasons why I used Prolific Academic to collect data, one of which is because Prolific Academic tends to have robust data quality compared to the other online crowdsourcing platforms (Eyal et al., 2021; Peer et al., 2017). Another reason is because Prolific Academic allows researchers to collect samples that suit their target populations (Goodman & Paolacci, 2017). In addition to allowing researchers to collect samples that closely represent their target populations, crowdsourcing allows the scientific community to grow less dependent on idiosyncratic samples (e.g., undergraduates at top American universities).

### **3.7 Procedure**

I used Prolific to collect data because it was beneficial in terms of examining my research questions and objectives. Because researchers tend to recruit students as participants to collect data and study innovation adoption using the TAM (Lee et al., 2003), my goal in this dissertation was to address this limitation. While recruiting students presents many advantages, students are

not representative of the entire population and therefore researchers have advocated for future research to include diverse samples (Marangunic & Granic, 2015). Generally speaking, students tend to be younger, more educated, have lower income, and are more technologically savvy compared to other populations. The results from these studies make it difficult to generalize to the entire population (Lee et al., 2003). Prolific was presented as an attractive option to address this limitation since it consisted of a diverse participant pool. Also, Prolific has a supportive infrastructure that allows researchers to recruit a high number of research participants in a short amount of time.

To begin collecting data to test my proposed research models, I first visited [prolific.com](https://prolific.com) and created an account. I then clicked “create a study” on the website. Prolific required me to fill out several pieces of information to activate the new project and make my survey available to recruit participants. First, it asked “What is the title of your study?” I titled my study “A study about the Apple Vision Pro.” It then asked “Give your study an internal name.” The internal name I gave for my study was “Apple Vision Pro.” Prolific also asked “describe what participants will be doing in this study” on the study details template. I mentioned that participants will fill out a survey regarding their perceptions and beliefs about the Apple Vision Pro. It then asked “how do you want to collect your data?” I decided to use an external study link generated from Qualtrics to collect data through Prolific. In the questionnaire generated through Qualtrics, I added a question in my study to record Prolific IDs. The purpose of this was to make link answers in my survey to participants in Prolific. This also allowed me to match participants’ demographic data with their answers and therefore reject poor quality responses. Moreover, I



indicated how much a worker would be paid to complete my survey. Based on Prolific best practices to ensure data quality, I paid \$2 per worker to complete my survey. I also indicated the number of respondents. I obtained 300 participants for each study to manage missing data and ultimately achieve the desired sample size generated by G\*Power 3.1.9.4. The completed surveys were stored on Qualtrics to be analyzed. Additionally, I required workers to reside in the United States of America to obtain a sample of only American consumers.

### **3.8 Measures**

There are a multitude of constructs and variables that were used for all three studies in this dissertation. A complete list of how these constructs and variables were measured is included in Appendix C.

#### ***Demographic Characteristics***

Demographic variables included gender (1 = Man/Transman, 2 = Woman/Transwoman, 3 = Genderqueer / Gender non-conforming / Gender non-binary / Gender Fluid, 4 = Two-spirited, 5= I prefer to self-define, 6= I prefer not to answer), marital status (1 = Single, 2 = Married, 3 = Divorced, 4 = Widowed, 5 = Other), education (1 = Graduated from high school, 2 = Currently attending community college, 3 = Graduated from community college, 4 = Currently attending university, 5 = Graduated from university, 6 = Currently attending graduate/professional studies, 7 = Graduated from graduate/professional studies, 8 = Other), income (1 = No income , 2 = Below \$30,000, 3 = 30,001 – 50,000, 4 = 50,001 – 70,000, 5 = 70,001 – 90,000, 6 = 90,001 – 110,000, 7 = 110,001+), and ethnicity (1 = Black/African American, 2 = Native American, 3 = Hispanic, 4 = Asian, 5 = White, 6 = Other).

### ***Perceived Ease of Use***

Using a 7-point Likert scale with responses ranging from 1 “strongly disagree” to 7 “strongly agree” (Likert, 1932), respondents were asked whether they agree or disagree with statements such as “The Apple Vision Pro will be easy to use.” Appendix C contains a complete list of items used to measure PEOU. The items used to measure PEOU were adapted from Davis (1989) and Venkatesh and Davis (2000) to ensure reliability and validity. I then modified these items to better reflect the context of the study.

### ***Perceived Usefulness***

Using a 7-point Likert scale with responses ranging from 1 “strongly disagree” to 7 “strongly agree” (Likert, 1932), respondents were asked whether they agree or disagree with statements such as “The Apple Vision Pro can improve my experience of watching sports.” Appendix C contains a complete list of items used to measure PU. The items used to measure PU were adapted from Davis (1989) and Venkatesh and Davis (2000) to ensure reliability and validity. I then modified these items to better reflect the context of the study.

### ***Purchase Intention***

Using a 7-point Likert scale with responses ranging from 1 “strongly disagree” to 7 “strongly agree” (Likert, 1932), respondents were asked whether they agree or disagree with statements such as “I intend to purchase the Apple Vision Pro within the foreseeable future.” Appendix C contains a complete list of items used to measure purchase intention (PI). The items used to measure PI were adapted from Dodds et al. (1991) to ensure reliability and validity. I then modified these items to better reflect the context of the study.

### ***Attitude***

Using a 7-point Likert scale with responses ranging from 1 “strongly disagree” to 7 “strongly agree” (Likert, 1932), respondents were asked whether they agree or disagree with statements such as “I intend to purchase the Apple Vision Pro within the foreseeable future.” Appendix C contains a complete list of items used to measure purchase intention (PI). The items used to measure PI were adapted from Dodds et al. (1991) to ensure reliability and validity. I then modified these items to better reflect the context of the study.

### ***Team Identification***

Team identification was measured using items adapted from the Group Identity Scale developed by Heere and James (2007). This multidimensional measure consisted of six dimensions, namely self-categorization, private evaluation, public evaluation, sense of interdependence with the group, interconnection of self with the group, behavioral involvement, and cognitive awareness. These dimensions explain how consumers identify with social groups. To assess private evaluation, using a 7-point bipolar Likert scale (Likert, 1932) with responses ranging from 1 “strongly disagree” to 7 “strongly agree”, respondents were asked whether they agree or disagree with statements such as “I feel good about being a fan of my professional sport team.”

To assess public evaluation, using a 7-point Likert scale with responses ranging from 1 “strongly disagree” to 7 “strongly agree” (Likert, 1932), respondents were asked whether they agree or disagree with statements such as “Overall, my professional sport team is viewed positively by others.” To assess sense of interdependence with the group, using a 7-point Likert

scale with responses ranging from 1 “strongly disagree” to 7 “strongly agree” (Likert, 1932), respondents were asked whether they agree or disagree with statements such as “What happens to my professional sport team will influence what happens in my life.

To assess interconnection of self with the group, using a 7-point Likert scale with responses ranging from 1 “strongly disagree” to 7 “strongly agree” (Likert, 1932), respondents were asked whether they agree or disagree with statements such as “When someone criticizes my professional sport team it feels like a personal insult.” To assess behavioral involvement using a 7-point Likert scale with responses ranging from 1 “strongly disagree” to 7 “strongly agree” (Likert, 1932), respondents were asked whether they agree or disagree with statements such as “I participate in activities supporting my professional sport team.” Finally, to assess cognitive awareness using a 7-point Likert scale with responses ranging from 1 “strongly disagree” to 7 “strongly agree” (Likert, 1932), respondents were asked whether they agree or disagree with statements such as “I am aware of the tradition and history of my professional sport team.” Appendix C contains a complete list of items used to measure team identification. Ever since it was first introduced, the Group Identity Scale developed by Heere and James (2007) has been established as credible and application in various global contexts and settings. It serves to shed light on the nature of consumer affiliations with groups, including sports teams, cities, universities, states, religions, and nations (Heere et al., 2011a; Heere et al., 2011b).

### **3.9 Data Analysis**

I employed structural equation modeling (SEM) to analyze the data using AMOS 21 and SPSS 29.0 (IBM Corp., 2011). This is a method that evaluates linear relationships between

various unobserved constructs (Shah & Goldstein, 2006). I used SEM as the analytical approach to analyze data because prior research has extensively used this method to investigate innovation adoption behavior (Kim et al., 2017; Ha & Stoel, 2009; Manis & Choi, 2019). Recognizing SEM's assumption for normally distributed data, my initial step involved using SPSS to look for any deviations from normality for each item, such as skewness or kurtosis, and to tackle issues related to missing data. Fortunately, I found no significant nonnormality issues. I then looked at the data set for missing values, cognizant of the difficulties that too many missing values can cause in SEM (Allison, 2003). I found no missing values in the data set, perhaps a consequence of using Prolific to collect data, a crowdsourcing platform that consists of high quality research participants (Eyal et al., 2021; Peer et al., 2017). Next, data analysis was conducted in two stages using structural equation modeling (SEM) in AMOS 21, employing maximum likelihood estimation as outlined by Anderson and Gerbing (1988). Initially, the process entailed defining and testing a measurement model, specifically confirmatory factor analysis (CFA), which was then followed by an investigation of the linear relationships among the latent constructs proposed in my model. While some SEM research includes exploratory factor analyses (EFA) (Asparohov & Muthén, 2009), my study's reliance on previously validated measures rendered EFA unnecessary.

I constructed the measurement model with 6 correlated factors: seven team identification factors (private evaluation; 3 items, public evaluation; 3 items, sense of interdependence with the group; 3 items, interconnection of self with the group; 3 items, behavioral involvement; 3 items, cognitive awareness; 3 items), two technology acceptance model factors (perceived usefulness; 6

items, perceived ease of use; 4 items, attitude; 5 items), and purchase intention (4 items). The participant responses to these items (observed variables) represented the characteristics of the theoretical constructs (unobserved variables). In line with established SEM practices (Hair et al., 2010), I evaluated the model's suitability using a variety of fit indices, which serve as measures of how well my specified model corresponds with the data. Inadequate matches indicated by significant cross-loadings between constructs lead to lower fit indices, whereas strong alignments result in higher indices. The chosen fit indices for model assessment included the chi-square/degree of freedom ratio ( $\chi^2/df$ ), the comparative fit index (CFI), the normed fit index (NFI), the Tucker-Lewis index (TLI), and the root mean square error of approximation (RMSEA) along with its associated p-value (PCLOSE). According to Hair et al. (2010), robust measurement models are characterized by a  $\chi^2/df$  ratio below 3, CFI, NFI, TLI values above .90 (preferably over .95), and an RMSEA below .05 with a non-significant PCLOSE at the .05 level.

## **Results (Study 1)**

### **3.9 Chapter Overview**

In this chapter, I provide sample characteristics, measurement model results, and structural model results for data collected. Under sample characteristics, I report the demographic profile of participants. Under measurement model results, I report the goodness-of-fit statistics and convergent validity and divergent validity. Finally, under structural model results, I show which of my hypotheses were supported by the data and interpret supported relationships.

### 3.10 Sample Characteristics

Of the total 272 respondents, 167 (61.40%) identified as a man/transman and 97 (35.70%) identified as a woman/transwoman. Additionally, 127 (46.70%) reported being single, while 109 (40.10) of the respondents reported being married. Moreover, most of the respondents reported completing high school education (21%) and completing university (43%). The majority of respondents were White (60.40%). Finally, 50 respondents reported an after tax income of 110,000 or more (18.40%), 51 (18.80%) below \$30,000, and 57 (21%) between \$50,001 – 70,000 (see table 2).

**Table 2: Demographic Profile of Participants**

Demographic Information	Frequency	Percentage (%)
N = 272 (100%)		
Gender		
Man/Transman	167	61.40
Woman/Transwoman	97	35.70
Genderqueer / Gender non-conforming / Gender non-binary / Gender Fluid	5	1.80
Two-spirited	1	0.40
I prefer to self-define		
I prefer not to answer	2	0.70
Marital Status		
Single	127	46.70

Married	109	40.10
Divorced	28	10.30
Widowed	3	1.10
Other	5	1.80

#### Education

Graduated from high school	57	21.0
Currently attending community college	2	0.70
Graduated from community college	19	7
Currently attending university	7	2.60
Graduated from university	117	43
Currently attending graduate/professional studies	5	1.80
Graduated from graduate/professional studies	65	23.90
Other		

#### Ethnicity

Black/African American	51	18.80
Native American	3	1.10
Hispanic	16	5.90
Asian	31	11.40
White	165	60.70
Other	6	2.20

#### Income



No income	4	1.50
Below \$30,000	51	18.80
30,001 – 50,000	51	18.80
50,001 – 70,000	57	21
70,001 – 90,000	28	10.30
90,001 – 110,000	31	11.40
110,001+	50	18.40

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### 3.11 Measurement Model Results

Prior to evaluating the structural model, it is imperative to ascertain the validity and reliability of the constructs in the model (Bagozzi & Yi, 2012; Fornell & Larcker, 1981; Hair et al., 2010). To test the measurement model, confirmatory factor analysis (CFA) was performed using AMOS 21. To begin, CFA was conducted with the factors from the TAM model (perceived ease of use, perceived usefulness, purchase intention, attitude) and factors from Team Identification (private evaluation, public evaluation, sense of interdependence with the group, interconnection with the group, behavioral involvement, cognitive awareness). There were no items removed from any of the factors. The set of 16 items from the factors comprising of the TAM model showed construct reliabilities, average variance extracted (AVE) (Fornell & Larcker, 1981), and Cronbach’s alphas that exceed recommended standards for reliability and unidimensionality. Similarly, this was also the case with the factors comprising of Team Identification.

As per Fornell and Larcker (1981), the confirmation of convergent validity hinges on achieving an Average Variance Extracted (AVE) surpassing 0.50 of the overall variance. Convergent validity refers to the degree to which a latent construct explains the variance in its indicators (Raykov & Marcoulides, 2012). The study successfully verified convergent validities for all four TAM factors and all factors from Team Identification based on this criterion. Conversely, discriminant validity measures the extent to which a latent construct uniquely explains the variance in its indicators, distinct from other constructs in the model (Raykov & Marcoulides, 2012). Put differently, discriminant validity, indicating the distinction between each factor, is established when (1) the maximum shared variance (MSV) is lower than the average shared variance (ASV), (2) ASV is lesser than AVE, and (3) the square root of AVE exceeds the inter-construct correlations (Hair et al., 2010). The goodness-of-fit statistics are as follows:  $\chi^2/df=1.72$ , CFI=0.98, NFI=0.94, TLI=0.97, RMSEA=0.05, and PCLSOE=0.34.

**Table 3: Means (M), Standard Deviations (SD), Factor Loadings ( $\lambda$ ), and Composite Reliabilities (CR)**

	<i>M</i>	<i>SD</i>	$\lambda$
<b>Perceived ease of use (<i>CR</i> = 0.97; <i>R</i><sub>2</sub> = 0.22)</b>			
The Apple Vision Pro is easy to use.	5.15	1.46	0.94
Learning to operate the Apple Vision Pro is easy.	5.09	1.57	0.94
Using the Apple Vision Pro will be clear and understandable.	5.18	1.51	0.96
It is easy to interact with the Apple Vision Pro.	5.26	1.52	0.95

**Perceived usefulness ( $CR = 0.93$ ;  $R_2 = 0.43$ )**

The Apple Vision Pro can improve my experience of watching sports.	4.96	1.81	0.90
Using the Apple Vision Pro can increase my chances of achieving things that are important to me as it relates to watching sports.	4.29	1.94	0.88
The Apple Vision Pro will be useful for watching sports.	5.01	1.78	0.90
Watching multiple sports games with real-time scores and stats using the Apple Vision Pro can enhance my knowledge of sports.	4.86	1.82	0.85

**Purchase Intention ( $CR = 0.98$ ;  $R_2 = 0.44$ )**

There is a high likelihood that I will purchase the Apple Vision Pro in the foreseeable future.	2.81	1.95	0.97
I intend to purchase the Apple Vision Pro within the foreseeable future.	2.70	1.99	0.99
I will purchase the Apple Vision Pro within the foreseeable future.	2.64	1.95	0.98

**Attitude ( $CR = 0.98$ ;  $R_2 = 0.60$ )**

My impression of purchasing the Apple Vision Pro is: good-bad	5.70	1.98	0.96
Positive-negative	5.61	2.13	0.96
Satisfactory-unsatisfactory	5.68	2.09	0.95
Favourable-unfavourable	5.49	2.17	0.95

Unpleasant-pleasant	5.68	2.11	0.95
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**Team Identification**

**Private Evaluation (CR = 0.97)**

I feel good about being a fan of my professional sport team.	5.17	1.72	0.98
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In general, I am glad to be a fan of my professional sport team	5.18	1.76	0.99
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I am proud to think of myself as a fan of my professional sport team	4.94	1.94	0.90
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**Public Evaluation (CR = 0.97)**

Overall, my professional sport team is viewed positively by others.	4.93	1.44	0.95
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In general, others respect my professional sport team	4.99	1.42	0.96
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Overall, people hold a favourable opinion about my professional sport team	4.97	1.47	0.97
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**Sense of interdependence with the Group (CR = 0.99)**

What happens to my professional sport team will influence what happens in my life.	2.42	1.83	0.97
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Changes affecting my professional sport team will have an impact on my own life.	2.42	1.81	0.99
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What happens to my professional sport team will have an impact on my own life.	2.44	1.82	0.99
--	------	------	------

**Interconnection of Self with the Group (CR = 0.95)**

When someone criticizes my professional sport team it feels like a personal insult.	2.92	1.98	0.90
In general, being associated with my professional sport team is an important part of my self-image.	2.94	1.98	0.94
When someone compliments my professional sport team, it feels like a personal compliment.	3.10	2.05	0.93

**Behavioral Involvement ( $CR = 0.97$ )**

I participate in activities supporting my professional sport team.	3.60	2.07	0.95
I am actively involved in activities that relate to my professional sport team.	3.40	2.14	0.97
I participate in activities with other (fans/members) of my professional sport team.	3.46	2.18	0.94

**Cognitive Awareness ( $CR = 0.97$ )**

I am aware of the tradition and history of my professional sport team.	4.72	2.01	0.94
I know the ins and outs of my professional sport team.	4.38	2.02	0.95
I have knowledge of the successes and failures of my professional sport team.	4.70	2.01	0.97

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**Table 4. Model Fit Statistics for CFA and Structural Models**

Model	$\chi^2/df$	CFI	NFI	TLI	RMSEA	PCLOSE
Model 1: CFA model	1.72	0.98	0.94	0.97	0.05	0.34
Model 2: Structural Model	1.80	0.97	0.94	0.97	0.05	0.11

### 3.12 Structural Model Results

The structural model in this study was tested using the maximum likelihood method with AMOS 21. The results showed the proposed structural model with  $\chi^2/df=1.80$ , CFI=0.97, NFI=0.94, TLI=0.97, RMSEA=0.05, and PCLSOE=0.11 (refer to tables 6 and 7 for full results). These results were regarded as acceptable fit according to Browne and Cudeck (1993). Overall, statistical tests supported all hypothesized paths except for H1<sub>b</sub>, H2<sub>a</sub>, H3<sub>a</sub>, H4<sub>a</sub>, H4<sub>b</sub>, H5<sub>a</sub>, H5<sub>b</sub>, H6<sub>b</sub> (see figure 12 for standardized path coefficients and significance levels).

Hypotheses 1<sub>a</sub> and 1<sub>b</sub> examined the impact of private evaluation on perceived usefulness and perceived ease of use. Private evaluation had a significant positive impact on perceived usefulness ( $\beta = 0.43^{**}$ ; SE = 0.10), thus hypothesis 1<sub>a</sub> was supported. This means that the more consumers felt good about being a sports fan, the more likely consumers felt the Apple Vision Pro could improve their experience of watching sports. To be sure, private evaluation did not have a significant positive impact on perceived ease of use ( $\beta = 0.43^{**}$ ; SE = 0.10), thus hypothesis 1<sub>b</sub> was not supported.

Hypotheses 2<sub>a</sub> and 2<sub>b</sub> examined the impact of public evaluation on perceived usefulness and perceived ease of use. Public evaluation had a significant positive impact on perceived ease of use ( $\beta = 0.32^{**}$ ; SE = 0.09), thus 2<sub>b</sub> was supported. That is, the more consumers believed others respected their team, the more likely they were to believe that the Apple Vision Pro would be easy to use. Hypotheses 3<sub>a</sub> and 3<sub>b</sub> examined the impact of sense of interdependence with the group on perceived usefulness and perceived ease of use. Sense of interdependence with the group had a significant positive impact on perceived ease of use ( $\beta = 0.21^*$ ; SE = 0.12), thus hypotheses 3<sub>b</sub> was supported. This means that the more consumers believed changes affecting their team would have an impact on their own life, the more likely they were to believe that the Apple Vision Pro would be easy to use.

Hypotheses 4<sub>a</sub> and 4<sub>b</sub> and hypotheses 5<sub>a</sub> and 5<sub>b</sub> examined the impact of interconnection of self with the group and behavioral involvement on perceived usefulness and perceived ease of use, respectively. However, these hypothesized paths did not have a significant positive impact on perceived usefulness and perceived ease of use and thus these hypotheses were not supported by the data. Hypotheses 6<sub>a</sub> and 6<sub>b</sub> examined the impact of cognitive awareness on perceived usefulness and perceived ease of use. Cognitive awareness had a significant negative impact on perceived usefulness ( $\beta = -0.16^*$ ; SE = 0.10), thus hypotheses 6<sub>a</sub> was supported. That is, the more consumers felt they were aware of the tradition and history of their team, the less likely consumers felt the Apple Vision Pro could improve their experience of watching sports. Hypotheses 7 examined the impact of perceived ease of use on perceived usefulness. The results showed that perceived ease of use had a significant positive impact on perceived usefulness ( $\beta =$

0.35\*\*; SE = 0.06), thus hypothesis 7 was supported. In other words, the more consumers believed the Apple Vision Pro would be easy to use, the more consumers felt it could improve their experience of watching sports. As such, forty-three percent of variance in perceived usefulness was explained by private evaluation, cognitive awareness, and perceived ease of use. Alternatively, twenty-two percent of variance in perceived ease of use was explained by public evaluation and sense of interdependence with the group.

Hypotheses 8 and 9 examined the impact of perceived usefulness and perceived ease of use on attitude, respectively. The results showed that perceived usefulness had a significant positive impact on attitude ( $\beta = 0.52^{**}$ ; SE = 0.08), thus 8 was supported. That is, the more consumers felt the Apple Vision Pro could improve their experience of watching sports, the more likely they were to believe purchasing the Apple Vision Pro would be good. Moreover, it showed that perceived ease of use had a significant positive impact on attitude ( $\beta = 0.23^{**}$ ; SE = 0.06), which means that the more consumers felt the Apple Vision Pro would be easy to use, the more likely they were to believe purchasing the Apple Vision Pro would be satisfactory. As a result, hypothesis 9 was supported. Sixty percent of variance in attitude toward purchasing the Apple Vision Pro is explained by the two salient belief constructs from the TAM, namely perceived usefulness and perceived ease of use. Finally, hypothesis 10 examined the impact of attitude on purchase intention. The results showed that attitude had a significant positive impact on purchase intention ( $\beta = 0.54^{**}$ ; SE = 0.07), thus hypothesis 10 was supported. That is, the more consumers felt a positive attitude toward purchasing the Apple Vision Pro, the more likely they



were to purchase the technology within the foreseeable future. As such, forty-four percent of variance in purchase intention was explained by attitude.

**Table 5. Correlations**

	Perceived ease of use	Perceived usefulness	Attitude	Purchase Intention	Private Evaluation	Public Evaluation	Sense of interdependence with the Group	Interconnection of Self with the Group	Behavioral Involvement	Cognitive Awareness
Perceived ease of use	-									
Perceived usefulness	0.50	-								
Attitude	0.57	0.72	-							
Purchase Intention	0.43	0.54	0.65	-						
Private Evaluation	0.31	0.50	0.46	0.41	-					
Public Evaluation	0.41	0.42	0.46	0.46	0.58	-				
Sense of interdependence with the Group	0.32	0.40	0.40	0.62	0.40	0.42	-			
Interconnection of Self with the Group	0.29	0.45	0.44	0.56	0.57	0.51	0.84	-		
Behavioral Involvement	0.37	0.41	0.44	0.56	0.70	0.52	0.62	0.74	-	
Cognitive Awareness	0.27	0.36	0.38	0.36	0.78	0.54	0.47	0.61	0.70	-

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Note: All  $p < .001$

**Table 6: Estimated Structural Relations Coefficients (Direct Effects)**

Hypothesized Relationships		Standardized Coefficient	SE
Direct Effects			
H1 <sub>a</sub>	Private evaluation → perceived usefulness	0.43**	.10
H1 <sub>b</sub>	Private evaluation → perceived ease of use	0.04	.10
H2 <sub>a</sub>	Public evaluation → perceived usefulness	0.04	.08
H2 <sub>b</sub>	Public evaluation → perceived ease of use	0.32**	.09
H3 <sub>a</sub>	Sense of interdependence with the group → perceived usefulness	0.12	.14
H3 <sub>b</sub>	Sense of interdependence with the group → perceived ease of use	0.21*	.12
H4 <sub>a</sub>	Interconnection of Self with the Group → perceived usefulness	0.17	.17
H4 <sub>d</sub>	Interconnection of Self with the Group →	-0.18	.17

perceived ease of use		
H5 <sub>a</sub>	Behavioral involvement → perceived usefulness	-0.12 .09
H5 <sub>b</sub>	Behavioral involvement → perceived ease of use	0.25 .13
H6 <sub>a</sub>	Cognitive awareness → perceived usefulness	-0.16* .10
H6 <sub>b</sub>	Cognitive awareness → perceived ease of use	-0.08 .10
H7	Perceived ease of use → perceived usefulness	0.35** .06
H8	Perceived usefulness → attitude	0.52** .08
H9	Perceived ease of use → attitude	0.23** .06
H10	Attitude → Purchase intention	0.54** .07

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Note. SE and p values of all direct effects were estimated with bootstrap analysis.

SE = standard error.

\*p < .05. \*\*p < .01. \*\*\*p < .001.

**Table 7: Estimated Structural Relations Coefficients (Indirect Effects)**

Hypothesized Relationships	Standardized Coefficient	SE
Indirect Effects		
H11 Perceived usefulness → purchase intention	0.15**	0.05
H12 Perceived ease of use → purchase intention	0.28**	0.04
H13 Private evaluation → purchase intention	0.20**	0.07
H14 Public evaluation → purchase intention	0.15**	0.05
H15 Perceived ease of use → attitude	0.18**	0.04
H17 Sense of interdependence with the group → attitude	0.15*	0.08
H18 Public evaluation → perceived usefulness	0.11**	0.04
H18 Sense of interdependence with the group → perceived usefulness	0.08*	0.04

Note. SE and p values of all direct effects were estimated with bootstrap analysis. SE = standard error.

\*p < .05. \*\*p < .01. \*\*\*p < .001.

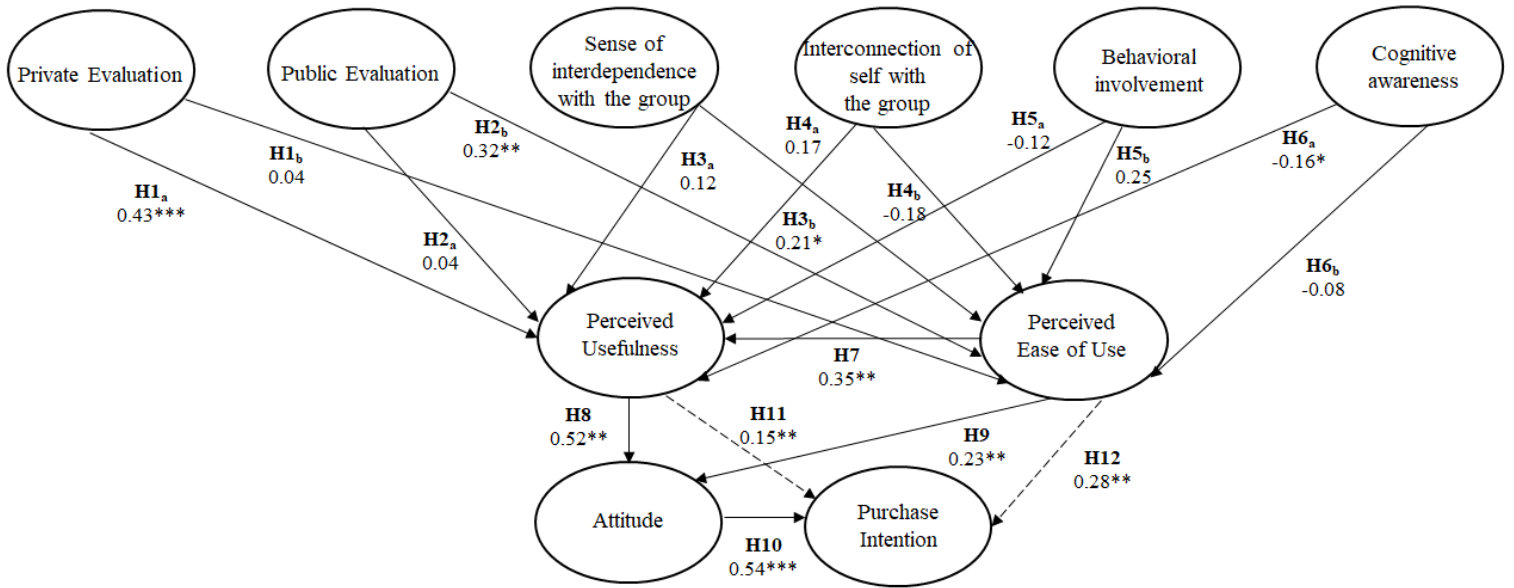


Figure 5. Research model of the relationships between team identification, perceived usefulness, perceived ease of use, attitude, and purchase intention

## Discussion (Study 1)

The purpose of this study was to explore the factors influencing sport consumers' intentions to purchase the Apple Vision Pro. Specifically, I examine the role of team identification, which consists of various identity dimensions such as private evaluation, public evaluation, interdependence with the group, interconnection of self with the group, behavioral involvement, and cognitive awareness. In the following sections, I interpret and explain the results related to the research questions that guided the development of my hypotheses. I then discuss the theoretical and practical implications of the results. Finally, I conclude this section by identifying limitations and opportunities for future research.

### **3.13 How does team identification influence the two belief constructs (perceived usefulness and perceived ease of use) of the technology acceptance model?**

Team identification is a concept widely explored in sport management research. It is characterized as the degree to which consumers consider themselves as supporters of a team and ultimately the extent to which they engage with the sports team (Branscombe & Wann, 1992). Team identification is a multifaceted concept that comprises of the following identity dimensions: private evaluation, public evaluation, interdependence with the group, interconnection of self with the group, behavioral involvement, and cognitive awareness.

The results showed that private evaluation had a positive impact on perceived usefulness; public evaluation had a positive impact on perceived ease of use; sense of interdependence with the group had a positive impact on perceived ease of use; and finally cognitive awareness had a significant negative impact on perceived usefulness. While previous research showed the relationship between various identity dimensions and sport consumer behavior (Heere et al., 2013), it did not test any relationships between the six identity dimensions and belief constructs of the technology acceptance model.

Compared to the standardized path coefficients of the relationships between the various identity dimensions, private evaluation appears as the strongest predictor of perceived usefulness. This suggests that consumers' emotional connection with their sports team can improve their perception of a technology product's utility. In other words, when fans feel a deep personal connection to their sports team, they are more likely to perceive sport technologies as beneficial and useful in terms of enhancing their fan experience.

Alternatively, public evaluation appears as the strongest predictor of perceived ease of use. This suggests that social aspects of team identification play a crucial role in how fans perceive using sports technology, including the Apple Vision Pro. This means that when fans believe their sports team is viewed positively by others and therefore strongly identify with their sports team, they are more likely to find the sports technology easier to use. This is perhaps a consequence of a greater willingness to engage with and learn about sports technologies that connect them to their fan community. Because this is the first study to examine such relationships, I recommend researchers to replicate these findings.

### **3.14 What is the relationship between perceived ease of use and perceived usefulness related to the Apple Vision Pro?**

Consistent with prior research (Gao et al., 2013; Lee et al., 2012; Muk & Chung, 2015; Oh et al., 2013), the results showed that perceived ease of use had a positive association with perceived usefulness with a standardized path coefficient of 0.35. Because these are salient constructs of the TAM and have been validated across multiple consumer contexts (Gao et al., 2013; Lee et al., 2012; Muk & Chung, 2015; Oh et al., 2013), this finding was not surprising. The results of this study showed a similar standardized path coefficient with other studies that applied the TAM in sport contexts (Marquez et al., 2020; Ha et al., 2017). For instance, Marquez et al. (2020) examined the factors influencing spectators' acceptance of digital ticketing. The researchers found that perceived ease of use had a positive impact on perceived usefulness with a standardized path coefficient of 0.37 (Marquez et al., 2020). However, one study by Ha et al. (2017) that investigated the factors influencing the use of smartphones in a sport consumption context had a much larger standardized path coefficient than the results of this study. That is, Ha



et al. (2017) found that perceived ease of use had a positive impact on perceived usefulness with a standardized path coefficient of 0.87.

My study's finding has several practical implications, namely it provides engineers and technology developers at Apple with data supported insights on the importance of making the Vision Pro easy to use. If technology developers can make the Vision Pro easy to use, then it is more likely that sport fans would find the technology useful. To be sure, in this study I did not allow participants to actually use the Vision Pro to get an idea of whether the Vision Pro is easy to use or not. Instead, participants had to watch a video of the Vision Pro that showed how the technology looks, the main features of the technology, and how to operate the technology. Of course, using the technology and reporting on whether it is easy to use or not compared to watching a video can lead to more informed responses. Also, because the first version of the Vision Pro is already designed and sold to the general public in the United States of America, there is really nothing Apple can do to reverse its design. However, moving forward, it is likely that Apple will be creating new versions of the Vision Pro and improving its product. Before this takes place, I recommend researchers to get a better understanding of why some sport fans may not feel like the Vision Pro is easy to use. These insights will be beneficial for Apple engineers and developers to create version 2 of the Vision Pro and make it easier to interact with. One potential area for improving the design and making it easier for sport fans to use is perhaps by making the technology lighter since common feedback on social media after the release of the Vision Pro was that consumers felt the technology was too heavy on the head.

Moreover, perceived usefulness is repeatedly found to be the strongest predictor of a consumer's use of a technology (Childers et al., 2001; Davis, 1989; Davis, 1989; Davis et al., 1992). As such, I suggest technology developers make the Vision Pro more useful for sport fans to increase sales. It is evident that sports fans who experience ease of use with the Vision Pro are also more likely to perceive it as useful. Therefore, it is vital for technology developers to carefully consider every design aspect, keeping sports fans' perspectives at the forefront.

### **3.15 How do the two belief constructs (perceived usefulness and perceived ease of use) influence attitude toward purchasing the Apple Vision Pro?**

This study revealed that attitudes towards purchasing the Apple Vision Pro are positively influenced by perceived usefulness and perceived ease of use. Among these factors, perceived usefulness emerges as the strongest influence on attitude. This aligns with prior research that identified perceived usefulness as the key driver in shaping attitudes towards innovation adoption (Davis, 1989; Venkatesh & Davis, 2000). The Vision Pro's specific features and benefits significantly contribute to this perception. That is, sport fans tend to prioritize the functional advantages and benefits that the Vision Pro provides, particularly in enhancing their fan experience. Therefore, it is hypothesized that the Vision Pro's distinct features and benefits might outweigh its ease of use in shaping sport fans' attitudes.

The simplicity with which sport fans can interact with the Vision Pro plays a crucial role in fostering favorable attitudes towards its purchase. As technology products increasingly become more complex in functionality and design and considering that older adults might not possess the necessary skills for newer technologies (Czaja et al., 2006), it is imperative for technology

companies to prioritize user-friendliness. This approach not only enhances positive attitudes but also boosts the likelihood of consumers purchasing and using technological innovations. Moreover, technology companies like Apple should strive for a balanced approach in both development and marketing of new technologies. While emphasizing user-friendliness is crucial, highlighting the unique features and benefits of the Vision Pro is equally important. As such, marketing the Vision Pro's advanced features and user-friendly design together can effectively improve sport fans' attitudes and has the potential to increase sales.

### **3.16 Does attitude mediate the relationship between the two belief constructs of the TAM and purchase intention?**

The study indicates that attitudes serve as a mediator in the relationship between two key beliefs in the TAM, namely perceived usefulness and perceived ease of use, and the intention to purchase the Apple Vision Pro. The positive indirect impact of perceived usefulness and ease of use on purchase intentions takes place through attitude. This implies that positive attitudes towards the Vision Pro, stemming from beliefs in its usefulness for watching sports and ease of use, increase the likelihood of consumers planning to buy it soon. Moreover, these findings suggest that these two belief constructs lay the groundwork for shaping attitudes, aligning with the theory of planned behavior (Ajzen, 1991; Ajzen & Fishbein, 1980). This theory posits that the intent to purchase is influenced not just by rational considerations but also by emotional and affective reactions.

The findings are also consistent with the original TAM model, which included attitude as a mediating factor (Davis, 1989). Over time, some researchers have argued for its removal,

suggesting that attitude only partially mediates the effect of perceived usefulness. For instance, Ha et al. (2017) analyzed smartphone usage in sports without including the attitude component in their TAM model application. However, other scholars have continued to integrate attitude in various contexts, as it often more effectively elucidates innovation adoption behaviors (Karahanna et al., 1999; Kim et al., 2017).

This suggests that the inclusion of attitude in the TAM may be more effective in certain contexts. In terms of sports technology, attitudes may play a more vital role, as sport fans process intricate information and develop perceptions about the product's impact on their fan experience. Therefore, while beliefs about a sports technology's usefulness and ease of use are vital, the emotional perceptions represented by attitudes also significantly influence the decision to purchase such technology.

### **3.17 How do perceived usefulness, perceived ease of use, and attitude mediate the relationship between dimensions of team identification and purchase intention?**

The findings showed that private evaluation and public evaluation, two dimensions of team identification, had an indirect positive effect on purchase intention through perceived usefulness, perceived ease of use, and attitude. Private evaluation, which reflects the personal and emotional connection a fan has with their team, positively influences their perception of Vision Pro's usefulness and ease of use. One possible explanation is fans with a strong personal connection to their team are more likely to see the Vision Pro as a valuable tool for enhancing their fan experience and finding the Vision Pro easy to use and operate. Similarly, public evaluation, understood as the degree to which fans believe others respect their sports team, also

positively influences their perceptions of the Apple Vision Pro's perceived usefulness, perceived ease of use, and their overall attitude toward it. This finding is consistent with social identity theory that explains how individuals form their identity through group memberships (i.e., sports fandom) which can lead to ingroup favoritism and intergroup discrimination (Huddy, 2001; Tajfel & Turner, 2004). As it relates to the context of sport, when fans strongly believe others respect their sports team, it may increase their own sense of pride and identity linked to their favorite sports team and as a result can transfer over to sport technologies.

Additionally, perceived usefulness as a mediator in this relationship is particularly noteworthy. This is because it suggests that the utility of the Vision Pro, as perceived by the consumer, is a crucial factor in translating their team identification into purchase intention, which is consistent with the TAM that shows perceived usefulness as a salient factor in innovation adoption. Moreover, perceived ease of use also plays a crucial role. It suggests that if the Vision Pro is perceived as easy and convenient to use, consumers with strong team identification are more likely to develop positive attitudes towards purchasing it. This is consistent with previous research indicating that perceived ease of use is a significant factor in technology acceptance and usage intention (Davis 1989; Agarwal & Prasad, 1999). Finally, private evaluation and cognitive awareness had an indirect effect positive effect on purchase intention through attitude, which is consistent with the original TAM model and the theory of planned behavior (Ajzen, 1985; Ajzen 1991; Davis 1989; Davis et al., Davis 1986).

### **3.18 How does attitude influence purchase intention of the Apple Vision Pro?**

The findings of this research indicate that consumers' attitudes of the Apple Vision Pro positively influence intentions to purchase the new technology in the foreseeable future. This relationship is consistent with the original technology acceptance model, which posits that attitude towards a behavior is a key predictor of consumers' behavioral intention to use a new technology (Davis 1989; Davis et al., 1989; Davis 1986). This suggests that sport consumers who view the Vision Pro favorably are more likely to consider purchasing the Vision Pro. This positive influence can be attributed to various factors that shape consumer attitudes, such as perceived usefulness and perceived ease of use of the technology. As a result, when consumers acknowledge that the Vision Pro is beneficial to their lives, their attitudes towards purchasing the technology become more positive. This, in turn, significantly enhances their intention to purchase.

To be sure, the mean scores of purchase intention seems to be low compared to the other constructs. One reason why this may be the case is because of the \$3,500 price tag of the Vision Pro. The high cost of this technology may negatively impact fans' perceptions and beliefs about purchasing the Vision Pro in the foreseeable future. Moreover, it could also be the case that fans may compare the Vision Pro to similar technological innovations that enhance the fan experience and therefore provide a more affordable alternative.

In terms of practical implications, I contend that Apple should implement effective marketing and communication strategies to promote positive attitudes. This can be accomplished by highlighting the unique features, benefits, and potential uses of the Vision Pro in ways that

resonate with sports fans. Demonstrating the practicality and efficiency of the product, as well as its superiority to competitors such as Meta Quest 3, could strengthen consumers' positive attitudes and therefore their purchase intentions.

### **3.19 Theoretical Implications**

This study advances the understanding of the technology acceptance model (TAM) in the context of sport. Until now, there has been a lack of knowledge about the role team identification plays in consumers' innovation adoption behaviors in sport contexts. To address this research gap, I have formulated and tested a conceptual framework that examines this phenomenon. My conceptual framework reveals the significant role of team identification in explaining sport consumers' intentions to purchase the Apple Vision Pro. Because the TAM has been traditionally applied in business and educational settings to understand innovation adoption behaviors, relying on factors such as perceived usefulness and perceived ease of use (Davis 1989; Venkatesh & Davis, 2000), extending this model to include emotional and social dimensions of sports fandom underscores the importance of psychological factors in innovation adoption. Including team identification into the TAM framework provides a novel perspective on innovation adoption behaviors in sport contexts. This is particularly relevant given the increasing integration of technology in sports, both as a fan engagement tool and as a means to enhance the fan experience (Ratten, 2020; Ratten & Ferreira, 2016a; Ratten & Ferreira, 2016b).

Moreover, the differential impacts of various dimensions of team identification, namely private evaluation, public evaluation, sense of interdependence, and cognitive awareness on TAM's belief constructs offer a more nuanced understanding of the innovation adoption process. As such,

one key takeaway is that not all aspects of team identification influence sports technology adoption in the same way. Additionally, the negative impact of cognitive awareness on perceived usefulness offers an intriguing insight into how greater knowledge about the history of consumers' favourite sports teams can lead to consumers' believing the Vision pro would not really improve their fan experience. This challenges the conventional assumption that greater knowledge always leads to positive product evaluations and suggests that sports technology marketers need to consider more sophisticated approaches when targeting highly knowledgeable fans.

In conclusion, this dissertation extends the TAM by including dimensions of team identification, offering new insights into how emotional and social factors influence innovation adoption in sport contexts. This theoretical advancement not only enhances our understanding of sport consumers' innovation adoption behaviors as it relates to the Apple Vision Pro but also provides a framework for future research exploring other psychological or social factors in sports technology adoption. To the best of my knowledge, this study is the first to incorporate team identification to the TAM to understand sport consumers' innovation adoption behaviors. This new understanding of how dimensions from team identification interact with salient constructs from the TAM could be highly beneficial for sport organizations and other stakeholders aiming to increase adoption rates of the Apple Vision Pro. The incorporation of contextually relevant constructs into the TAM is warranted and necessary.

### **3.20 Practical Implications**

This study's findings offer valuable insights for practitioners in developing marketing and behavioral strategies. A key finding is that private evaluation and cognitive awareness



indirectly and positively impacted purchase intention through perceived usefulness, perceived ease of use, and attitude. As such, I recommend marketers and technology developers implement strategies that highlight the usefulness and ease of use of technologies such as the Vision Pro. I also recommend targeted marketing strategies that can appeal to the emotional and cognitive aspects of team identification, leading to enhance purchase intentions among sports fans. Another key finding in this study is that private evaluation had a direct positive impact on perceived usefulness; while cognitive awareness had a significant negative impact on perceived usefulness. Moreover, public evaluation had a direct positive impact on perceived ease of use, while sense of interdependence with the group had a positive impact on perceived ease of use.

These insights have practical implications for marketers and developers of sports technology. Strategies that leverage emotional aspects of fan identity could be effective in highlighting the usefulness of new technologies, while community-building and social engagement strategies could enhance perceptions of ease of use. Tailoring marketing and product development efforts to different aspects of team identification could therefore be a key strategy in promoting sports technology products like the Vision Pro.

### **3.21 Limitations and Future Research**

There are several limitations in this study. Firstly, most of the sample may not accurately reflect the broader demographic of Apple Vision Pro users as 60.40% reported identifying as White and 61.40% identified as a man/transman. To enhance the generalizability of the findings, I recommend future studies to include a more representative sample. Additionally, this study suggests that integrating team identification into the Technology Acceptance Model (TAM)

offers a more comprehensive understanding of what drives purchase intention of the Apple Vision Pro than either model alone. Although the combined model is effective in predicting purchase intentions in this context, more research is necessary to explore how other factors influence consumers' purchase intentions of the Apple Vision Pro. For instance, future studies could incorporate personality traits such as the big five, supernumerary personality inventory, and the dark triad into the model to deepen the understanding of user behavior. Future research could also include factors such as technological anxiety, social influence, perceived risk, and resistance to technology to get a better understanding of user behavior.

Moreover, some hypothesized relationships would benefit from further investigation. While previous studies have showed perceived ease of use and perceived usefulness as the strongest predictors of consumers' intentions to adopt a technology, including more mediators and moderators in the model can help us understand why consumers decide to adopt the Vision Pro. Additionally, while the theory underpinning the model is robust and supports causal inference, the hypotheses in this study were tested using cross-sectional data. I recommend researchers to employ a longitudinal design that could build stronger evidence of causality. A longitudinal design is suitable since innovations often spread gradually through populations (Rogers, 2003). Moreover, this is the first study to examine sport consumers' acceptance of the Apple Vision Pro and as such it is crucial for other researchers to replicate this study's findings using new data. In addition to replicating these findings using a cross-sectional design, researchers can also adopt a between-subjects experimental design, varying the type of spatial

computing device (i.e., Quest, Vision Pro). This method aims to identify which device consumers are more willing to adopt, considering both the content and the hardware.

In conclusion, the potential for future research, the findings of this study, and its significant contributions to the TAM literature paint an optimistic future for better understanding innovation adoption in sport contexts. Marketers, technology developers, and companies can benefit by leveraging new technology in its development phase.

## **Chapter 4**

### **Method (Study 2)**

#### **4.1 Chapter Overview**

In this chapter, I discuss the study context, participants and design, sampling strategy, data collection, procedure, measures, and data analysis. It is important to note that most of the methods are similar to study 1. The only difference in this chapter is the measures subsection since new variables were added to my conceptual model.

#### **4.2 Study Context**

The context for study 2 remains the same as study 1.

#### **4.3 Participants and Design**

Study 2 examined the role team identification plays in consumers' purchase intentions of the Apple Vision Pro. In study 2, a total of 272 American participants were recruited from Prolific to complete an online questionnaire designed through Qualtrics. Most of the participants reported being single (46.70%) with a high school education (43%). Participants received \$2 for completing the questionnaire.

#### **4.4 Measures**

There are a multitude of constructs and variables that were used for all three studies in this dissertation. A complete list of how these constructs and variables were measured is included in Appendix C.

#### ***Demographic Characteristics***

Demographic variables included gender (1 = Man/Transman, 2 = Woman/Transwoman, 3 = Genderqueer / Gender non-conforming / Gender non-binary / Gender Fluid, 4 = Two-spirited, 5= I prefer to self-define, 6= I prefer not to answer), marital status (1 = Single, 2 = Married, 3 = Divorced, 4 = Widowed, 5 = Other), education (1 = Graduated from high school, 2 = Currently attending community college, 3 = Graduated from community college, 4 = Currently attending university, 5 = Graduated from university, 6 = Currently attending graduate/professional studies, 7 = Graduated from graduate/professional studies, 8 = Other), income (1 = No income , 2 = Below \$30,000, 3 = 30,001 – 50,000, 4 = 50,001 – 70,000, 5 = 70,001 – 90,000, 6 = 90,001 – 110,000, 7 = 110,001+), and ethnicity (1 = Black/African American, 2 = Native American, 3 = Hispanic, 4 = Asian, 5 = White, 6 = Other).

### ***Perceived Ease of Use***

Using a 7-point Likert scale with responses ranging from 1 “strongly disagree” to 7 “strongly agree” (Likert, 1932), respondents were asked whether they agree or disagree with statements such as “The Apple Vision Pro will be easy to use.” Appendix C contains a complete list of items used to measure PEOU. The items used to measure PEOU were adapted from Davis (1989) and Venkatesh and Davis (2000) to ensure reliability and validity. I then modified these items to better reflect the context of the study.

### ***Perceived Usefulness***

Using a 7-point Likert scale with responses ranging from 1 “strongly disagree” to 7 “strongly agree” (Likert, 1932), respondents were asked whether they agree or disagree with statements such as “The Apple Vision Pro can improve my experience of watching sports.”

Appendix C contains a complete list of items used to measure PU. The items used to measure PU were adapted from Davis (1989) and Venkatesh and Davis (2000) to ensure reliability and validity. I then modified these items to better reflect the context of the study.

### ***Purchase Intention***

Using a 7-point Likert scale with responses ranging from 1 “strongly disagree” to 7 “strongly agree” (Likert, 1932), respondents were asked whether they agree or disagree with statements such as “I intend to purchase the Apple Vision Pro within the foreseeable future.”

Appendix C contains a complete list of items used to measure purchase intention (PI). The items used to measure PI were adapted from Dodds et al. (1991) to ensure reliability and validity. I then modified these items to better reflect the context of the study.

### ***Attitude***

Using a 7-point Likert scale with responses ranging from 1 “strongly disagree” to 7 “strongly agree” (Likert, 1932), respondents were asked whether they agree or disagree with statements such as “I intend to purchase the Apple Vision Pro within the foreseeable future.”

Appendix C contains a complete list of items used to measure purchase intention (PI). The items used to measure PI were adapted from Dodds et al. (1991) to ensure reliability and validity. I then modified these items to better reflect the context of the study.

### ***Trialability***

Using a 7-point Likert scale with responses ranging from 1 “strongly disagree” to 7 “strongly agree” (Likert, 1932), respondents were asked whether they agree or disagree with statements such as “Before I decide to use the Apple Vision Pro, I would like to view a

demonstration of using it.” Appendix C contains a complete list of items used to measure trialability. The items used to measure trialability were adapted from Yuen et al. (2018) to ensure reliability and validity. I then modified these items to better reflect the context of the study.

### ***Complexity***

Using a 7-point Likert scale with responses ranging from 1 “strongly disagree” to 7 “strongly agree” (Likert, 1932), respondents were asked whether they agree or disagree with statements such as “Using the Apple Vision Pro would require technical skills.” Appendix C contains a complete list of items used to measure complexity. The items used to measure image were adapted from Tan and Teo (2000) and Cruz et al. (2009) to ensure reliability and validity. I then modified these items to better reflect the context of the study.

### ***Compatibility***

Using a 7-point Likert scale with responses ranging from 1 “strongly disagree” to 7 “strongly agree” (Likert, 1932), respondents were asked whether they agree or disagree with statements such as “The Apple Vision Pro would be compatible with my needs in terms of watching sports.” Appendix C contains a complete list of items used to measure compatibility. The items used to measure image were adapted from Yuen et al. (2020) to ensure reliability and validity. I then modified these items to better reflect the context of the study.

### ***Observability***

Using a 7-point Likert scale with responses ranging from 1 “strongly disagree” to 7 “strongly agree” (Likert, 1932), respondents were asked whether they agree or disagree with statements such as “I can see the benefits of using the Apple Vision Pro immediately.” Appendix

C contains a complete list of items used to measure compatibility. The items used to measure image were adapted from Moore and Benbasat (1991) and AlJabri and Sohail (2012) to ensure reliability and validity. I then modified these items to better reflect the context of the study.

## **Results (Study 2)**

### **4.5 Chapter Overview**

In this section, I present the results of testing my hypothesized research model. First, the sample characteristics are presented. Next, under measurement model results, I report the goodness-of-fit statistics and convergent validity and divergent validity. Finally, I present the structural model results with a visual representation of my research model.

### **4.6 Sample Characteristics**

Of the total 272 respondents, 167 (61.40%) identified as a man/transman and 97 (35.70%) identified as a woman/transwoman. Additionally, 127 (46.70%) reported being single, while 109 (40.10) of the respondents reported being married. Moreover, most of the respondents reported completing high school education (21%) and completing university (43%). The majority of respondents were White (60.40%). Finally, 50 respondents reported an after tax income of 110,000 or more (18.40%), 51 (18.80%) below \$30,000, and 57 (21%) between \$50,001 – 70,000 (see table 8).



**Table 8: Demographic Profile of Participants**

Demographic Information	Frequency	Percentage (%)
N = 272 (100%)		
Gender		
Man/Transman	167	61.40
Woman/Transwoman	97	35.70
Genderqueer / Gender non-conforming / Gender non-binary / Gender Fluid	5	1.80
Two-spirited	1	0.40
I prefer to self-define		
I prefer not to answer	2	0.70
Marital Status		
Single	127	46.70
Married	109	40.10
Divorced	28	10.30
Widowed	3	1.10
Other	5	1.80
Education		
Graduated from high school	57	21.0

Currently attending community college	2	0.70
Graduated from community college	19	7
Currently attending university	7	2.60
Graduated from university	117	43
Currently attending graduate/professional studies	5	1.80
Graduated from graduate/professional studies	65	23.9
Other		

#### Ethnicity

Black/African American	51	18.8
Native American	3	1.10
Hispanic	16	5.90
Asian	31	11.40
White	165	60.70
Other	6	2.20

#### Income

No income	4	1.50
Below \$30,000	51	18.80
30,001 – 50,000	51	18.80
50,001 – 70,000	57	21
70,001 – 90,000	28	10.30
90,001 – 110,000	31	11.40

110,001+

50

18.40

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#### 4.7 Measurement Model Results

The measurement model was tested through confirmatory factor analysis (CFA) using AMOS 21. Initially, CFA examined the constructs of the TAM – perceived ease of use, perceived usefulness, purchase intention, and attitude – along with constructs from Innovation Diffusion Theory, including compatibility, complexity, trialability, and observability. No items were eliminated from any of these factors. The TAM model’s 16-item set demonstrated construct reliabilities, average variance extracted (AVE) (Fornell & Larcker, 1981), and Cronbach’s alphas that exceed recommended standards for reliability and unidimensionality (see table 9). A similar outcome was observed for the constructs related to Innovation Diffusion Theory.

According to Fornell and Larcker (1981), the establishment of convergent validity is contingent on Average Variance Extracted (AVE) that exceeds 50% of total variance. This criterion was met in this study for all four factors of the TAM and the constructs from Innovation Diffusion Theory. For discriminant validity, which ensures that each factor is distinct, it is required that the AVE be greater than the square of the correlation coefficient between factors (Raykov & Marcoulides, 2012). This requirement was fulfilled for every pair of factors related to adoption of the Apple Vision Pro. The goodness-of-fit statistics are as follows:  $\chi^2/df=1.69$ , CFI=0.98, NFI=0.96, TLI=0.98, RMSEA=0.05, and PCLSOE=0.74.

**Table 9: Means (M), Standard Deviations (SD), Factor Loadings ( $\lambda$ ), and Composite Reliabilities (CR)**

	<i>M</i>	<i>SD</i>	$\lambda$
<b>Perceived ease of use (<math>CR = 0.97</math>; <math>R_2 = 0.49</math>)</b>			
The Apple Vision Pro is easy to use.	5.15	1.46	0.94
Learning to operate the Apple Vision Pro is easy.	5.09	1.57	0.94
Using the Apple Vision Pro will be clear and understandable.	5.18	1.51	0.96
It is easy to interact with the Apple Vision Pro.	5.26	1.52	0.95
<b>Perceived usefulness (<math>CR = 0.93</math>; <math>R_2 = 0.81</math>)</b>			
The Apple Vision Pro can improve my experience of watching sports.	4.96	1.81	0.89
Using the Apple Vision Pro can increase my chances of achieving things that are important to me as it relates to watching sports.	4.29	1.94	0.88
The Apple Vision Pro will be useful for watching sports.	5.01	1.78	0.91
Watching multiple sports games with real-time scores and stats using the Apple Vision Pro can enhance my knowledge of sports.	4.86	1.82	0.85
<b>Purchase Intention (<math>CR = 0.98</math>; <math>R_2 = 0.45</math>)</b>			
There is a high likelihood that I will purchase the Apple Vision Pro in the	2.81	1.95	0.97

foreseeable future.

I intend to purchase the Apple Vision Pro within the foreseeable future.	2.70	1.99	0.99
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I will purchase the Apple Vision Pro within the foreseeable future.	2.64	1.95	0.98
---	------	------	------

**Attitude ( $CR = 0.98$ ;  $R_2 = 0.64$ )**

My impression of purchasing the Apple Vision Pro is: good-bad	5.70	1.98	0.96
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Positive-negative	5.61	2.13	0.96
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Satisfactory-unsatisfactory	5.68	2.09	0.95
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Favourable-unfavourable	5.49	2.17	0.95
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Unpleasant-pleasant	5.68	2.11	0.95
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**Compatibility ( $CR = 0.98$ )**

The Apple Vision Pro would be compatible with my needs in terms of watching sports.			0.97
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The Apple Vision Pro would be compatible with my wants in terms of watching sports.			0.97
---	--	--	------

The Apple Vision Pro would be compatible with my expectations in terms of watching sports.			0.96
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**Complexity ( $CR = 0.94$ )**

Using the Apple Vision Pro would require technical skills.	0.91
Using the Apple Vision Pro would require me to be technologically savvy.	0.95
Using the Apple Vision Pro would require technical understanding.	0.90

**Trialability (CR = 0.91)**

Before I decide to use the Apple Vision Pro mixed reality headset, I would like to view a demonstration of using it.	0.91
Before I decide to use the Apple Vision Pro mixed reality headset, I would like to know how it works.	0.92
Before I decide to use the Apple Vision Pro mixed reality headset, I would like to try it.	0.81

**Table 10. Model Fit Statistics for CFA and Structural Models**

Model	$\chi^2/df$	CFI	NFI	TLI	RMSEA	PCLOSE
Model 1: CFA model	1.69	0.98	0.96	0.98	0.05	0.74
Model 2: Structural Model	1.69	0.98	0.95	0.98	0.05	0.45

#### 4.8 Structural Model Results

The structural model in this study was tested using the maximum likelihood method with AMOS 21. The results showed the proposed structural model with  $\chi^2/df=1.69$ , CFI=0.98, NFI=0.95, TLI=0.98, RMSEA=0.05, and PCLSOE=0.45, regarded as acceptable fit according to Browne and Cudeck, 1993). Overall, statistical tests supported all hypothesized paths except for H1<sub>b</sub>, H2<sub>a</sub>, H3<sub>b</sub>, and H5 (see figure 13 for standardized path coefficients and significance levels). Hypotheses 1<sub>a</sub> and 1<sub>b</sub> examined the impact of compatibility on perceived usefulness and perceived ease of use. The results showed that compatibility had a significant positive influence on perceived usefulness ( $\beta = 0.55^{**}$ ; SE = 0.06). This means that the more consumers believed the Apple Vision Pro would be compatible with their needs in terms of watching sports, the more likely consumers felt it could improve their experience of watching sports.

Hypotheses 2<sub>a</sub> and 2<sub>b</sub> examined the influence of complexity on perceived usefulness and perceived ease of use. Complexity had a significant negative influence on perceived ease of use ( $\beta = 0.29^{**}$ ; SE = 0.05). That is, the more consumers believed using the Apple Vision Pro would require technical skills, the less likely consumers felt it could improve their experience of watching sports. Hypotheses 3<sub>a</sub> and 3<sub>b</sub> examined the influence of trialability on perceived usefulness and perceived ease of use. Trialability had a significant positive influence on perceived usefulness ( $\beta = 0.15^*$ ; SE = 0.05). In other words, the more consumers felt they would like to view a demonstration of using the Vision Pro before purchasing it, the more likely consumers felt it could improve their experience of watching sports.



Hypotheses 4<sub>a</sub> and 4<sub>b</sub> examined the influence of observability on perceived usefulness and perceived ease of use. The results showed that observability had a significant positive influence on perceived ease of use ( $\beta = 0.57^{***}$ ; SE = 0.06). That is, the more consumers believed they could see the benefits of using the Apple Vision Pro immediately, the more likely consumers felt the Vision Pro could be easy to use. Similarly, observability had a significant positive influence on perceived usefulness ( $\beta = 0.32^{***}$ ; SE = 0.07). This means that the more consumers believed they could see the benefits of using the Apple Vision Pro immediately, the more likely consumers felt it could improve their experience of watching sports. As such, eighty-one percent of variance in perceived usefulness was explained by compatibility, trialability, and observability. Similarly, forty-nine percent of variance in perceived ease of use was explained by compatibility, complexity, and observability.

Hypotheses 7 examined the influence of perceived usefulness on attitude and the results showed it had a significant positive influence on attitude ( $\beta = 0.66^{***}$ ; SE = 0.06). In other words, the more consumers believed the Apple Vision Pro would enhance their experience of watching sports, the more likely consumers were to feel positive impressions about purchasing the Vision Pro. Similarly, hypotheses 8 examined the influence of perceived ease of use on attitude. The results showed that perceived ease of use had a significant positive impact on attitude ( $\beta = 0.22^{***}$ ; SE = 0.07). This means that the more consumers believed the Apple Vision Pro would be easy to use, the more likely consumers were to feel positive impressions about purchasing the Vision Pro. As such, sixty-four percent of variance in attitude was explained by perceived usefulness and perceived ease of use. Finally, hypothesis 8 examined the

impact of attitude on purchase intention. The results showed that attitude had a significant positive impact on purchase intention ( $\beta = 0.49^{**}$ ;  $SE = 0.07$ ). In other words, the more consumers had positive impressions of purchasing the Apple Vision Pro, the more likely consumers were to purchase the Vision Pro in the foreseeable future. As such, sixty-four percent of variance in purchase intention was explained by attitude.

**Table 11. Correlations**

	PEOU	PEU	ATD	PUR	COM	CPL	TRI	OBS
Perceived ease of use	-							
Perceived usefulness	0.50***	-						
Attitude	0.57***	0.72***	-					
Purchase Intention	0.43***	0.54***	0.65***	-				
Compatibility	0.52***	0.82***	0.74***	0.59***	-			
Complexity	-0.23***	0.12	0.11	0.12*	0.07	-		
Trialability	0.19**	0.44***	0.41***	0.18**	0.32**	0.20***	-	
Observability	0.64***	0.76***	0.73***	0.53***	0.73***	0.73***	0.34***	-

Note: \* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

**Table 12: Estimated Structural Relations Coefficients (Direct Effects)**

<b>Hypothesized Relationships</b>	<b>Standard Coefficient</b>	<b>SE</b>
Direct Effects		
H1 <sub>a</sub> Compatibility → perceived usefulness	0.55***	0.06
H1 <sub>b</sub> Compatibility → perceived ease of use	0.12*	0.07
H2 <sub>a</sub> Complexity → perceived usefulness	0.05	0.04
H2 <sub>b</sub> Complexity → perceived ease of use	-0.29***	0.05
H3 <sub>a</sub> Trialability → perceived usefulness	0.15***	0.05
H3 <sub>b</sub> Trialability → perceived ease of use	0.03	0.06
H4 <sub>a</sub> Observability → perceived usefulness	0.32***	0.07
H4 <sub>b</sub> Observability → perceived ease of use	0.57***	0.06
H5 Perceived ease of use → perceived usefulness	0.02	0.00
H6 Perceived usefulness → attitude	0.66***	0.06
H7 Perceived ease of use → attitude	0.22***	0.07
H8 Attitude → Purchase intention	0.49***	0.07

Note. SE and p values of all direct effects were estimated with bootstrap analysis.

SE = standard error.

\*p < .05. \*\*p < .01. \*\*\*p < .001.

**Table 13: Estimated Structural Relations Coefficients (Indirect Effects)**

<b>Hypothesized Relationships</b>	<b>Standardized Coefficient</b>	<b>SE</b>
Indirect Effects		
H9 Perceived usefulness → purchase intention	0.32***	0.05
H10 Perceived ease of use → purchase intention	0.12**	0.04
H11 <sub>a</sub> Compatibility → purchase intention	0.31***	0.04
H11 <sub>b</sub> Compatibility → attitude	0.34***	0.05
H12 <sub>a</sub> Trialability → purchase intention	0.08***	0.03
H12 <sub>b</sub> Trialability → attitude	0.12***	0.03
H13 <sub>a</sub> Observability → purchase intention	0.24***	0.04
H13 <sub>b</sub> Observability → attitude	0.34**	0.04

Note. SE and p values of all indirect effects were estimated with bootstrap analysis.

SE = standard error.

\*p < .05. \*\*p < .01. \*\*\*p < .001.

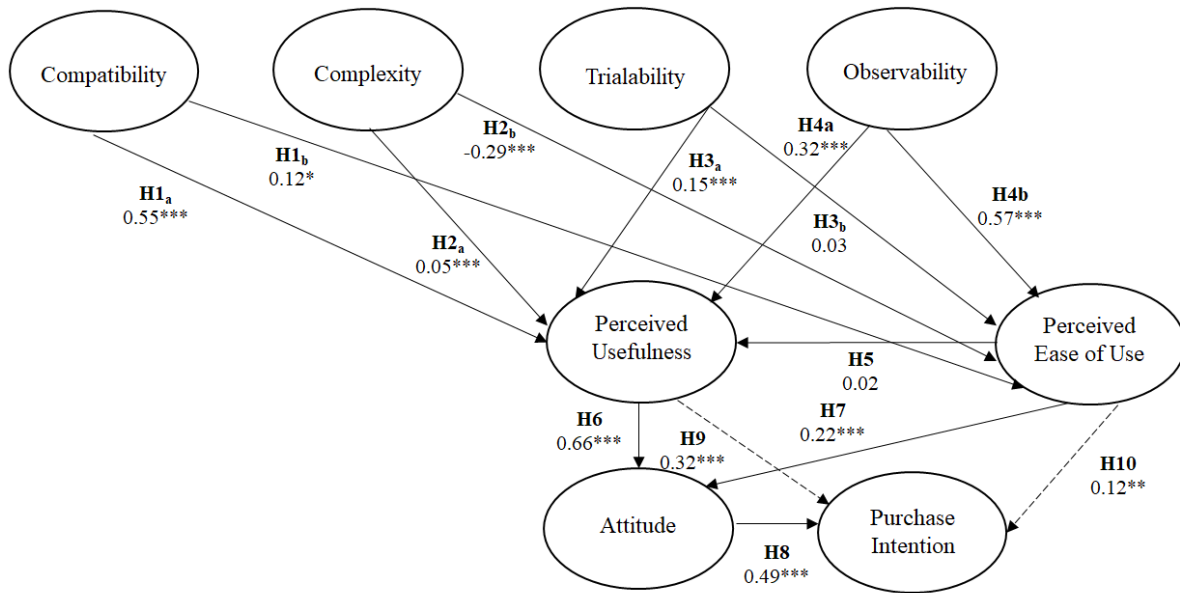


Figure 6. Research model of the relationships between innovation diffusion theory, perceived usefulness, perceived ease of use, attitude, and purchase intention

## Discussion (Study 2)

The purpose of this study was to integrate constructs from innovation diffusion theory to the technology acceptance model and explain consumers' purchase intentions of the Apple Vision Pro. The results confirmed my proposed research models and hypotheses, showing that compatibility, trialability, and observability positively and indirectly influenced purchase intention through perceived usefulness, perceived ease of use, and attitude.

### 4.10 Do constructs from innovation diffusion theory influence perceived usefulness and perceived ease of use?

The results showed that compatibility had a positive influence on perceived usefulness. This suggests that the extent to which consumers perceive the Vision Pro to be compatible with their needs and wants in terms of watching sports is crucial in determining the technology's usefulness. In other words, it is possible that sports technologies that correspond with sports fans' needs and wants in terms of watching sports are perceived as more valuable.

Moreover, the results showed that complexity had a negative influence on perceived ease of use, highlighting the importance of the Apple Vision Pro's technology design for sports fans. It suggests that the more complex a sports technology is perceived to be, the less likely it is to be considered easy to use. As such, it is highly recommended that technology developers pay close attention to simplicity and user-friendliness in the design of sports technology. The results also showed that trialability had a positive influence on perceived usefulness. This means that providing sports fans with the opportunity to try the technology before purchasing it can enhance their perception of its usefulness. As such, it might be sensible for Apple and other technology companies to offer demos or trials to improve perceived usefulness.

Moreover, the results showed that observability had a positive influence on perceived usefulness and perceived ease of use. Previous research showed relationships between various aspects of innovation diffusion theory and the salient belief constructs of the technology acceptance model. For instance, Yuen et al. (2021) examined the factors influencing consumers' behavioral intention to use autonomous vehicles. The researchers found that compatibility positively influenced perceived usefulness, while trialability positively influenced perceived ease of use (Yuen et al., 2021). However, in the context of sport, these relationships have yet to be examined. The unique context of sport presents different challenges and opportunities compared to other contexts such as autonomous vehicles. Therefore, this study's insights provide valuable guidance for developers and marketers in the sport industry.

#### **4.11 What is the relationship between perceived ease of use and perceived usefulness related to the Apple Vision Pro?**

Unlike previous studies, the results showed that perceived ease of use did not have a significant positive impact on perceived usefulness. This result was surprising given that the relationship between perceived ease of use and perceived usefulness was consistently supported in various consumer contexts (Gao et al., 2013; Lee et al., 2012; Muk & Chung, 2015; Oh et al., 2013; Porter & Donthu, 2006; Schepers & Wetzels, 2007).

#### **4.12 How do the two belief constructs (perceived usefulness and perceived ease of use) influence attitude toward purchasing the Apple Vision Pro?**

The results of this study showed that both perceived usefulness and perceived ease of use positively influenced attitude toward purchasing the Apple Vision Pro. Consumers are more likely to value the functionality and benefits that the Vision Pro offers as it relates to improving their fan experience. Therefore, I speculate that the unique features and benefits provided by the Vision Pro can supersede the ease of use when forming an attitude towards the Vision Pro.

Perceived ease of use also positively influenced attitude toward purchasing the Apple Vision Pro. This is consistent with previous research that showed perceived ease of use is a strong predictor of shaping consumers' attitude towards new technology (Davis, 1989; Venkatesh & Bala, 2008). This means that the ease of use with which consumers interact with the Vision Pro can play an important role in developing favorable attitudes towards purchasing the technology. Because technology products have the potential to get more complex in terms of its functionality and design, and because older adults may not have the technical skills to operate some of the new technological innovations (Czaja et al., 2006), it is highly recommend for

technology companies to ensure that new technology products are user-friendly in order to enhance positive attitudes and therefore contribute to a higher likelihood of adoption. Moreover, it is also sensible for technology companies to take a balanced approach in the development and marketing of new technology products. While it is important for technology companies to ensure that new technology products are user-friendly, it is also important to advertise the unique benefits and features of the technology products (Kotler & Keller, 2016). In summary, promoting the advanced features and functionalities of the Vision Pro in addition to its user-friendly design can be an effective approach to enhance positive consumer attitudes and therefore increase adoption rates.

#### **4.13 Does attitude mediate the relationship between the two belief constructs of the TAM and purchase intention?**

Attitude mediated relationships between two belief constructs of the TAM, namely perceived usefulness and perceived ease of use, and purchase intention of the Apple Vision Pro. That is, perceived usefulness and perceived ease of use had a positive indirect effect on purchase intention through attitude. This suggests that positive attitudes help explain why the more consumers believed the Apple Vision Pro would be useful for watching sports and easy to use, the more consumers felt they would purchase the Vision Pro within the foreseeable future. Moreover, it suggests that perceived usefulness and perceived ease of use form a foundational basis upon which attitudes are developed. These findings are consistent with the theory of planned behavior in which it argues that consumers' behavioral intentions to purchase a product



are not reliant on only employing the tools of rationality but also based upon their emotional and affective responses to it (Ajzen 1985; Ajzen 1991).

Moreover, these findings are also consistent with the original TAM which included attitude as a mediator. However, throughout the years it has been removed since researchers argued that attitude only partially mediated perceived usefulness (Davis et al., 1989; Venkatesh, 1999). For instance, Ha et al. (2017) examined the factors impacting fans' use of smartphones in a sport consumption context. In doing so, Ha et al. (2017) tested the TAM model without the attitude construct. Nonetheless, other researchers have continued to apply the TAM in other contexts and settings with the attitude construct because it shows to better explain innovation adoption behaviors (Davis 2012; Gefen et al., 2003; Lee et al., 2011).

As such, it is possible that including attitude in the TAM works well as a mediator in only some contexts and settings. In the context of sports technology, consumers' attitudes may play a more critical role since consumers decipher complex information and form perceptions about the product's potential impact on their fan experience. Therefore, while it is true that consumers' perceptions and beliefs about the usefulness and ease of use of sports technology are important, it is also the case that consumers' emotional perceptions represented by attitudes are influential in the decision to purchase sports technology.

#### **4.14 Do perceived usefulness, perceived ease of use, and attitude mediate the relationship between constructs from innovation diffusion theory and purchase intention?**

The findings show that compatibility, trialability, and observability had an indirect positive effect on purchase intention through perceived usefulness, perceived ease of use, and attitude. These findings suggest a significant role for key constructs of innovation diffusion theory in shaping consumer attitudes and intentions toward new technologies like the Vision Pro. Specifically, compatibility, or how well the product fits with potential users' existing values, past experiences, and needs, influences how useful and easy to use the Vision Pro is perceived to be. This is consistent with innovation diffusion theory, which posits compatibility as a crucial factor in the adoption of innovations (Rogers et al., 2014; Solomon, 2019; Yuen et al., 2021). As it relates to the Apple Vision Pro, I speculate that its compatibility with the needs and values of sports fans may enhance the Vision Pro's perceived usefulness and ease of use.

Moreover, trialability, the degree to which an innovation can be experimented with before a commitment is made, also plays a vital role. That is, the opportunity to try the Vision Pro can significantly increase its perceived usefulness and ease of use, as consumers can directly experience its benefits and functionalities, thereby reducing uncertainty and developing a more favorable attitude towards purchasing the new technology.

Additionally, observability, or the extent to which the results of an innovation are visible to others, indirectly influences purchase intention. When consumers observe others using the Vision Pro and enjoying its benefits, it can enhance the product's perceived usefulness and ease

of use, as well as create a positive attitude towards it. This is perhaps a consequence of social proof, the idea that consumers are swayed by the experiences of others to infer a course of action (Neelamegham et al., 1999; Premazaai et al., 2010; Reinstein et al., 2005).

The mediation effects of perceived usefulness, perceived ease of use, and attitude in this relationship underscore the importance of these factors in the technology adoption process. By ensuring that the Vision Pro is seen as useful, easy to use, and compatible with consumers' lifestyles and values, marketers and technology developers can significantly enhance purchase intentions. As such, I argue that marketing strategies for the Vision Pro should not only focus on demonstrating its features and benefits but also emphasize its compatibility with users' lifestyles, offer opportunities for trial, and leverage social proof by showcasing observable benefits and endorsements by existing users.

#### **4.15 How does attitude influence purchase intention of the Apple Vision Pro?**

The findings of this study shows that sports fans' attitude of the Apple Vision Pro positively influence purchasing the new technology in the foreseeable future, which is consistent with the large body of literature on the original technology acceptance model (TAM). The original TAM consistently shows that attitude towards a behavior is a strong predictor of consumers' behavioral intention to use a new technology (Davis, 1989; Davis et al., 1989; Davis, 1986). This means that sports fans that hold positive impressions of the Vision Pro are more likely to consider purchasing the Vision Pro. Several factors that influence consumer attitudes, namely perceived usefulness and perceived ease of use, can explain the positive relationship between attitude and purchase intention. As such, when consumers acknowledge that the Vision

Pro adds value to their lives, their attitudes towards purchasing the technology become more positive. This, in turn, significantly enhances their intention to purchase.

Based on this finding, I recommend Apple to advertise unique sport-related features, benefits to enhance the fan experience, and potential uses of the Apple Vision Pro for various sport-related purposes in ways that resonate with sports fans and ultimately promote positive attitudes. Demonstrating the usefulness of the Vision Pro to enhance the fan experience, in addition to its superiority over the Meta Quest 3, could strengthen consumers' positive perceptions and, consequently, their purchase intentions.

Understanding the drivers of positive attitudes towards new technology products like the Vision Pro can provide invaluable insights for technology companies. These insights can be used to tailor product development, marketing strategies, and customer engagement efforts to align with consumer expectations and preferences, especially as it relates to sports fans. This study's finding, fundamentally, highlights the consequential role of consumer attitudes in determining purchase intentions in the context of the Apple Vision Pro.

#### **4.16 Theoretical Implications**

This study makes a theoretical contribution to the understanding of user acceptance, particularly in the context of the Apple Vision Pro. Its primary advancement lies in expanding knowledge about the factors influencing purchase intentions of the Apple Vision Pro. In doing so, to the best of my knowledge, this is the first study to apply and extend the technology acceptance model (TAM) to examine the Apple Vision Pro and spatial computing. Because researchers have heavily relied on a single theory to understand innovation adoption in sport

contexts, it leads to a crucial research gap. For instance, Ha et al. (2017) investigated the factors influencing the use of smartphones in a sport consumption context. In doing so, the researchers only relied on the TAM to explain the use of smartphones (Ha et al., 2017).

This study aims to fill this void by integrating salient constructs from innovation diffusion theory (i.e., trialability, complexity, compatibility, observability) to the technology acceptance model to better understand sport consumers' adoption behaviors in the context of the Apple Vision Pro. This study shows that constructs from innovation diffusion theory can influence potential users' acceptance of the Vision Pro through perceived usefulness and perceived ease of use, offering new perspectives to examine the acceptance of the Vision Pro and potentially other sport technologies. Moreover, this study closes an important research gap in sport consumer innovation adoption by proposing an integrated IDT-TAM model. Though commonly applied in other areas, this integrated approach has seen limited theoretical exploration in the context of the Apple Vision Pro and other sport technologies. The integration of IDT with the TAM enhances each theory's strengths, showcasing great adaptability in studying the acceptance of the Vision Pro.

#### **4.17 Practical Implications**

The findings offer several valuable insights for sport practitioners. Fundamentally, this research highlights that compatibility, complexity, trialability, and observability are key factors driving consumers' purchase intentions of the Apple Vision Pro. Fans are more inclined to purchase the Apple Vision Pro if they believe the technology would be compatible with their needs in terms of watching sports. This underscores the significance of enhancing Apple's

marketing communication strategies to include more engaging content related to how the Vision Pro would satisfy the needs and wants of fans. Moreover, trialability emerges as a critical factor influencing usage intentions through perceived usefulness and perceived ease of use. This indicates that fans are concerned about viewing a demonstration of the Vision Pro before purchasing the technology. As such, sport organizations may want to allow fans to try the Vision Pro during games. To further encourage sport fans to use the technology, those who design and develop the Vision Pro should focus on introducing innovative features and content specific to enhancing the fan experience.

Another finding in this study is that attitude mediated relationships between two belief constructs of the TAM and purchase intention of the Apple Vision Pro. This means that marketers and technology developers should focus their attention not only on strengthening the functional aspects of the technology but also on influencing positive consumer attitudes. One way in which Apple can positively influence consumer attitudes is through social media given the vast number of sports fans that are active on these platforms. By first understanding consumer sentiments of the Vision Pro related to sports, Apple can then go ahead and address some misinformation and disinformation about the Vision Pro. This can hopefully offset some of the negative impression's sports fans hold about purchasing the Vision Pro. Moreover, Apple can positively influence consumer attitudes through Twitter by promoting sports fans' tweets on Apple's account that share positive feedback about using the Vision Pro.

#### **4.18 Limitations and Future Research**

One limitation of this study is that the composition of the sample might not accurately represent the diverse demographic of Apple Vision Pro users, as it predominantly consists of individuals identifying as White (60.40%) and as a man/transman (61.40%). To improve the generalizability of the results, future studies should aim for a more diverse sample. Additionally, the study presents an integration of the TAM with innovation diffusion theory, aiming to provide a richer understanding of the factors influencing purchase intention of the Apple Vision Pro. Yet, this integration is currently in a preliminary phase. The objective is to develop a model that is both parsimonious and theoretically robust, especially in assessing how sport-related aspects like team identification influence user behavior. While the combined model shows promise in predicting purchase intentions in this context, there is a need for further research to delve into how other factors shape purchase intentions for the Apple Vision Pro.

Further investigation is also required for some of the hypothesized relationships in the study. While previous research has identified perceived ease of use to be a strong predictor of perceived usefulness, the results showed that perceived ease of use did not have a significant positive impact on perceived usefulness. As such, future research should examine this relationship in various contexts and consumer segments. It would be beneficial to learn whether this finding is unique to the sports technology context or if it also holds true to other advanced technology products. Future research could also examine the roles of consumer tech-savviness, product complexity, and brand perception in shaping the relationship between perceived ease of use and perceived usefulness.

Furthermore, although the theoretical framework of the model supports causal relationships, the hypotheses were tested using cross-sectional data. Future research employing a longitudinal approach could strengthen causal claims, which is important considering that innovations typically diffuse slowly (Rogers, 2003). This study, being the first to explore sport consumers' acceptance of the Apple Vision Pro, underscores the need for replication with new data. Future research might also include a between-subjects experimental design, comparing various spatial computing devices like the Quest and Vision Pro, to ascertain consumer preferences regarding both content and hardware.

The potential for future research, in addition with this study's contributions to the TAM literature, offers a positive trajectory for understanding innovation adoption in sports contexts. Marketers, technology developers, and companies stand to gain by leveraging this emerging technology during its development. Given the study's focus on the hedonic and utility aspects of the Apple Vision Pro, there's ample opportunity for further exploration and innovation in this field.



## **Chapter 5**

### **Method (Study 3)**

#### **5.1 Chapter Overview**

In this chapter, I discuss the study context, participants and design, sampling strategy, data collection, procedure, measures, and data analysis. It is important to note that most of the methods are similar to study 2. The only difference in this chapter is the measures subsection since new variables were added to my conceptual model.

#### **5.2 Participants and Design**

Study 3 examined the roles of perceived monetary value and perceived financial risk in consumers' purchase intentions of the Apple Vision Pro. In study 3, a total of 272 American participants were recruited from Prolific to complete an online questionnaire designed through Qualtrics. Most of the participants reported being single (46.70%) with a high school education (43%). Participants received \$2 for completing the questionnaire.

#### **5.3 Measures**

There are many constructs and variables used for all three studies in this dissertation. A complete list of how these constructs and variables were measured is included in Appendix C.

##### ***Demographic Characteristics***

Demographic variables included gender (1 = Man/Transman, 2 = Woman/Transwoman, 3 = Genderqueer / Gender non-conforming / Gender non-binary / Gender Fluid, 4 = Two-spirited, 5= I prefer to self-define, 6= I prefer not to answer), marital status (1 = Single, 2 = Married, 3 = Divorced, 4 = Widowed, 5 = Other), education (1 = Graduated from high school, 2 = Currently

attending community college, 3 = Graduated from community college, 4 = Currently attending university, 5 = Graduated from university, 6 = Currently attending graduate/professional studies, 7 = Graduated from graduate/professional studies, 8 = Other), income (1 = No income , 2 = Below \$30,000, 3 = 30,001 – 50,000, 4 = 50,001 – 70,000, 5 = 70,001 – 90,000, 6 = 90,001 – 110,000, 7 = 110,001+), and ethnicity (1 = Black/African American, 2 = Native American, 3 = Hispanic, 4 = Asian, 5 = White, 6 = Other).

### ***Perceived Ease of Use***

Using a 7-point Likert scale with responses ranging from 1 “strongly disagree” to 7 “strongly agree” (Likert, 1932), respondents were asked whether they agree or disagree with statements such as “The Apple Vision Pro will be easy to use.” Appendix C contains a complete list of items used to measure PEOU. The items used to measure PEOU were adapted from Davis (1989) and Venkatesh and Davis (2000) to ensure reliability and validity. I then modified these items to better reflect the context of the study.

### ***Perceived Usefulness***

Using a 7-point Likert scale with responses ranging from 1 “strongly disagree” to 7 “strongly agree” (Likert, 1932), respondents were asked whether they agree or disagree with statements such as “The Apple Vision Pro can improve my experience of watching sports.” Appendix C contains a complete list of items used to measure PU. The items used to measure PU were adapted from Davis (1989) and Venkatesh and Davis (2000) to ensure reliability and validity. I then modified these items to better reflect the context of the study.

### ***Purchase Intention***

Using a 7-point Likert scale with responses ranging from 1 “strongly disagree” to 7 “strongly agree” (Likert, 1932), respondents were asked whether they agree or disagree with statements such as “I intend to purchase the Apple Vision Pro within the foreseeable future.” Appendix C contains a complete list of items used to measure purchase intention (PI). The items used to measure PI were adapted from Dodds et al. (1991) to ensure reliability and validity. I then modified these items to better reflect the context of the study.

### ***Attitude***

Using a 7-point Likert scale with responses ranging from 1 “strongly disagree” to 7 “strongly agree” (Likert, 1932), respondents were asked whether they agree or disagree with statements such as “I intend to purchase the Apple Vision Pro within the foreseeable future.” Appendix C contains a complete list of items used to measure purchase intention (PI). The items used to measure PI were adapted from Dodds et al. (1991) to ensure reliability and validity. I then modified these items to better reflect the context of the study.

### ***Perceived Monetary Value***

Using a 7-point Likert scale with responses ranging from 1 “strongly disagree” to 7 “strongly agree” (Likert, 1932), respondents were asked whether they agree or disagree with statements such as “The Apple Vision Pro will offer value for money.” Appendix C contains a complete list of items used to measure perceived monetary value. The items used to measure perceived monetary value were adapted from Dodds et al. (1991), Kang and Maity (2012), Kim et al. (2008), Petrick (2004), Sweeney and Soutar (2001), and Williams and Soutar (2009) to

ensure reliability and validity. I then modified these items to better reflect the context of the study.

### ***Perceived Financial Risk***

Using a 7-point Likert scale with responses ranging from 1 “strongly disagree” to 7 “strongly agree” (Likert, 1932), respondents were asked whether they agree or disagree with statements such as “I will waste my money by purchasing the Apple Vision Pro.” Appendix C contains a complete list of items used to measure perceived financial risk. The items used to measure image were adapted from Petrick (2004), Sweeney and Soutar (2001), and Williams and Soutar (2009) to ensure reliability and validity. I then modified these items to better reflect the context of the study.

## **Results (Study 3)**

### **5.4 Chapter Overview**

In this section, I present the results of testing my hypothesized research model. It consists of the sample characteristics, measurement model results, and structural model results. At the end of the section, I present a visual representation of my research model with direct and indirect effects and standardized coefficients.

### **5.5 Sample Characteristics**

Of the total 272 respondents, 167 (61.40%) identified as a man/transman and 97 (35.70%) identified as a woman/transwoman. Additionally, 127 (46.70%) reported being single, while 109 (40.10) of the respondents reported being married. Moreover, most of the respondents reported completing high school education (21%) and completing university (43%). The majority

of respondents were White (60.40%). Finally, 50 respondents reported an after tax income of 110,000 or more (18.40%), 51 (18.80%) below \$30,000, and 57 (21%) between \$50,001 – 70,000 (see table 14).

**Table 14: Demographic Profile of Participants**

Demographic Information	Frequency	Percentage (%)
N = 272 (100%)		
Gender		
Man/Transman	167	61.40
Woman/Transwoman	97	35.70
Genderqueer / Gender non-conforming / Gender non-binary / Gender Fluid	5	1.80
Two-spirited	1	0.40
I prefer to self-define		
I prefer not to answer	2	0.70
Marital Status		
Single	127	46.70
Married	109	40.10
Divorced	28	10.30
Widowed	3	1.10
Other	5	1.80
Education		

Graduated from high school	57	21.0
Currently attending community college	2	0.70
Graduated from community college	19	7
Currently attending university	7	2.60
Graduated from university	117	43
Currently attending graduate/professional studies	5	1.80
Graduated from graduate/professional studies	65	23.9
Other		

#### Ethnicity

Black/African American	51	18.8
Native American	3	1.10
Hispanic	16	5.90
Asian	31	11.40
White	165	60.70
Other	6	2.20

#### Income

No income	4	1.50
Below \$30,000	51	18.80
30,001 – 50,000	51	18.80
50,001 – 70,000	57	21
70,001 – 90,000	28	10.30

90,001 – 110,000	31	11.40
110,001+	50	18.40

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## 5.6 Measurement Model Results

Confirmatory factor analysis (CFA) using AMOS 21 was employed to evaluate the measurement model. The analysis initially focused on the Technology Acceptance Model (TAM) constructs, namely perceived ease of use, perceived usefulness, purchase intention, and attitude – in addition to perceived monetary value and perceived financial value. All items within these factors were retained. The TAM’s 16-item measure showed construct reliabilities, average variance extracted (AVE) (Fornell & Larcker, 1981), and Cronbach’s alphas that surpassed recommended benchmark for reliability and unidimensionality. Similar results were obtained for perceived monetary value and perceived financial value.

In line with Fornell and Larcker (1981), convergent validity depends on achieving an AVE greater than 50% of the total variance. This study met this threshold for all four TAM factors and perceived monetary value and perceived financial value. Discriminant validity, which confirms the uniqueness of each factor, is established when the AVE is higher than the squared correlation coefficient between factors (Raykov & Marcoulides, 2012). This criterion was successfully met for each pair of factors associated with the adoption of the Apple Vision Pro. The goodness-of-fit statistics are as follows:  $\chi^2/df=1.69$ , CFI=0.98, NFI=0.96, TLI=0.98, RMSEA=0.05, and PCLSOE=0.20.

**Table 15: Means (M), Standard Deviations (SD), Factor Loadings ( $\lambda$ ), and Composite Reliabilities (CR)**

	<i>M</i>	<i>SD</i>	$\lambda$
<b>Perceived ease of use (<math>CR = 0.97</math>; <math>R^2 = 0.49</math>)</b>			
The Apple Vision Pro is easy to use.	5.15	1.46	0.94
Learning to operate the Apple Vision Pro is easy.	5.09	1.57	0.93
Using the Apple Vision Pro will be clear and understandable.	5.18	1.51	0.96
It is easy to interact with the Apple Vision Pro.	5.26	1.52	0.95
<b>Perceived usefulness (<math>CR = 0.93</math>; <math>R^2 = 0.81</math>)</b>			
The Apple Vision Pro can improve my experience of watching sports.	4.96	1.81	0.88
Using the Apple Vision Pro can increase my chances of achieving things that are important to me as it relates to watching sports.	4.29	1.94	0.89
The Apple Vision Pro will be useful for watching sports.	5.01	1.78	0.91
Watching multiple sports games with real-time scores and stats using the Apple Vision Pro can enhance my knowledge of sports.	4.86	1.82	0.85
<b>Purchase Intention (<math>CR = 0.98</math>; <math>R^2 = 0.45</math>)</b>			
There is a high likelihood that I will	2.81	1.95	0.97



purchase the Apple Vision Pro in the foreseeable future.

I intend to purchase the Apple Vision Pro within the foreseeable future.	2.70	1.99	0.99
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I will purchase the Apple Vision Pro within the foreseeable future.	2.64	1.95	0.98
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**Attitude ( $CR = 0.98$ ;  $R^2 = 0.64$ )**

My impression of purchasing the Apple Vision Pro is: good-bad	5.70	1.98	0.96
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Positive-negative	5.61	2.13	0.96
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Satisfactory-unsatisfactory	5.68	2.09	0.95
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Favourable-unfavourable	5.49	2.17	0.95
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Unpleasant-pleasant	5.68	2.11	0.95
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**Perceived Monetary Value ( $CR = 0.94$ )**

The Apple Vision Pro is reasonably priced at \$3,500	2.50	1.77	0.85
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The Apple Vision Pro will offer value for money	3.13	1.86	0.93
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The Apple Vision Pro will be good for the price	2.98	1.85	0.96
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The Apple Vision Pro can be economical	4.70	2.06	0.83
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**Perceived Financial Risk ( $CR = 0.91$ )**

I will waste my money by purchasing the Apple Vision Pro	4.70	2.06	0.86
The financial investment I will make for the Apple Vision Pro will not be a wise decision	5.34	1.85	0.85
I will not get my money's worth from purchasing the Apple Vision Pro	4.90	2.00	0.92

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**Table 16. Model Fit Statistics for CFA and Structural Models**

Model	$\chi^2/df$	CFI	NFI	TLI	RMSEA	PCLOSE
Model 1: CFA model	1.69	0.98	0.96	0.98	0.05	0.20
Model 2: Structural Model	1.80	0.98	0.96	0.98	0.05	0.20

## 5.7 Structural Model Results

The structural model in this study was tested using the maximum likelihood method with AMOS 21. The results showed the proposed structural model with  $\chi^2/df=1.80$ , CFI=0.98, NFI=0.96, TLI=0.98, RMSEA=0.05, and PCLSOE=0.20, regarded as acceptable fit according to Browne and Cudeck (1993). Overall, statistical tests supported all hypothesized paths except for H2<sub>a</sub> and H5 (see figure 14 for standardized path coefficients and significance levels).

Hypotheses 1<sub>a</sub> and 1<sub>b</sub> examined the impact of perceived usefulness on perceived monetary value and perceived financial risk. The results showed that perceived usefulness had a significant positive influence on perceived monetary value ( $\beta = 0.22^{***}$ ; SE = 0.06). This means that the more consumers felt the Vision Pro would enhance their experience watching sports, the more likely consumers were to believe that the Vision Pro would offer value for money. Conversely, perceived usefulness had a significant negative influence on perceived financial risk ( $\beta = -0.48^{***}$ ; SE = 0.06). That is, the more consumers felt the Vision Pro would enhance their experience watching sports, the less likely consumers were to believe that they would waste their money purchasing the Vision Pro.

Hypotheses 2<sub>a</sub> and 2<sub>b</sub> examined the influence of perceived ease of use on perceived monetary value and perceived financial risk. The results showed that perceived ease of use had a significant negative influence on perceived financial risk ( $\beta = -0.11^{**}$ ; SE = 0.06). That is, the more consumers felt the Vision Pro would enhance their experience watching sports, the less likely consumers were to believe that they would waste their money purchasing the Vision Pro.

Hypotheses 3 examined the influence of perceived financial risk on perceived monetary value. Perceived financial risk had a significant negative influence on perceived monetary value

( $\beta = -0.64^*$ ; SE = 0.06). That is, the more consumers believed they would waste their money by purchasing the Vision Pro, the less likely they were to believe that the Vision Pro would offer value for money. Hypothesis 4 examined the influence of perceived financial risk on attitude. The results showed that perceived financial risk had a significant negative influence on attitude ( $\beta = -0.29^{***}$ ; SE = 0.07). Put differently, the more consumers believed that they would waste their money by purchasing the Vision Pro, the less likely they were to hold positive impressions about purchasing the Vision Pro. As such, sixty-four percent of variance in attitude was explained by perceived financial risk. Hypothesis 5 examined the influence of attitude on purchase. The results showed that attitude had a significant positive influence on purchase intention ( $\beta = 0.30^{***}$ ; SE = 0.06). That is, the more consumers felt positive impressions of purchasing the Vision Pro, the more likely they were to purchase the Vision Pro in the foreseeable future. As such, forty-five percent of variance in purchase intention was explained by attitude.

**Table 17. Correlations**

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	Perceived monetary value	Perceived financial risk	Attitude	Purchase Intention	Perceived usefulness	Perceived ease of use
Perceived monetary value	-					
Perceived financial risk	-0.78	-				
Attitude	0.62	-0.63	-			
Purchase Intention	0.72	-0.67	0.65	-		
Perceived usefulness	0.59	-0.53	0.72	0.54	-	
Perceived ease of use	0.40	-0.35	0.57	0.43	0.50	-

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Note: All  $p < .001$

**Table 18. Estimated Structural Relations Coefficients (Direct Effects)**

<b>Hypothesized Relationships</b>		<b>Standardized Coefficient</b>	<b>SE</b>
Direct Effects			
H1 <sub>a</sub>	Perceived usefulness → perceived monetary value	0.22***	0.06
H1 <sub>b</sub>	Perceived usefulness → perceived financial risk	-0.48***	0.06
H2 <sub>a</sub>	Perceived ease of use → perceived monetary value	0.07	0.04
H2 <sub>b</sub>	Perceived ease of use → perceived financial risk	-0.11**	0.06
H3	Perceived financial risk → perceived monetary value	-0.64**	0.06
H4	Perceived financial risk → attitude	-0.29***	0.07
H5	Perceived monetary value → attitude	0.05	0.07
H6	Attitude → purchase intention	0.30***	0.06

Note. SE and p values of all direct effects were estimated with bootstrap analysis. SE = standard error.

\*p < .05. \*\*p < .01. \*\*\*p < .001.

**Table 19. Estimated Structural Relations Coefficients (Indirect Effects)**

<b>Hypothesized Relationships</b>		<b>Standardized Coefficient</b>	<b>SE</b>
Indirect Effects			
H7	Perceived financial risk → purchase intention	-0.35***	0.07
H8	Perceived usefulness → purchase intention	0.47***	0.05
H9	Perceived ease of use → purchase intention	0.39***	0.04
H10	Perceived ease of use → attitude	0.33***	0.05
H11	Perceived usefulness → attitude	0.16***	0.03

Note. SE and p values of all indirect effects were estimated with bootstrap analysis.

SE = standard error.

\*p < .05. \*\*p < .01. \*\*\*p < .001.

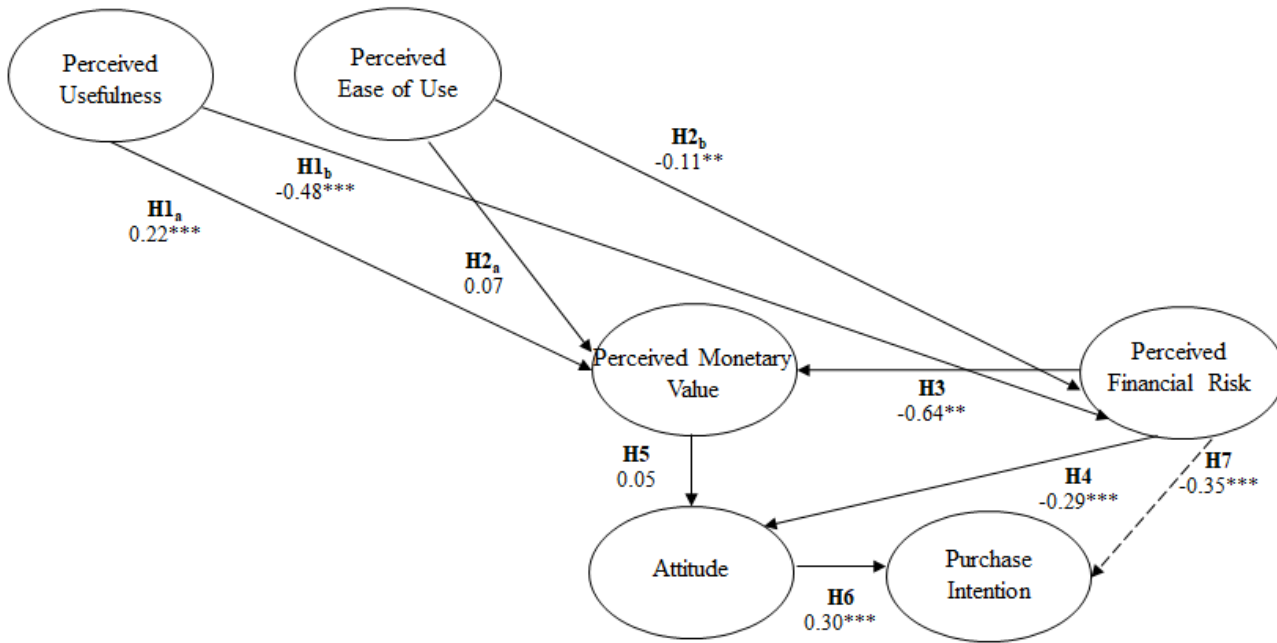


Figure 7. Research model of the relationships between perceived usefulness, perceived ease of use, perceived monetary value, perceived financial risk, attitude, and purchase intention

## Discussion (Study 3)

### 5.8 Chapter Overview

The purpose of this study was to examine the roles of perceived monetary value and perceived financial risk in explaining consumers' purchase intentions of the Apple Vision Pro. Guided by the technology acceptance model (TAM), the results confirmed my proposed research models and hypotheses, showing that perceived financial risk negatively influenced attitude, which in turn influenced purchase intention of the Apple Vision Pro.

### 5.10 Does perceived usefulness and perceived ease of use influence perceived monetary value and perceived financial risk?

The results showed that perceived usefulness had a significant positive influence on perceived monetary value and that perceived ease of use had a significant negative influence on



perceived financial risk. This suggests that consumers' belief in the Vision Pro's ability to enhance their fan experience directly contributes to their perception of the technology as providing value for money. This finding aligns with existing literature related innovation adoption and consumer behavior, which posits that the practical benefits perceived in a product significantly influence its value assessment (Davis, 1989; Venkatesh & Davis, 2000).

This relationship underscores the importance of practical utility in shaping consumer perceptions of monetary worth. As it relates to the Vision Pro, it implies that the more the product is perceived as enhancing the fan experience, the more it is valued in monetary terms. In terms of practical implications, this finding offers insights for marketers and technology developers. For instance, strategies that highlight the functional benefits of the Vision Pro, namely its advanced features for watching sports, could enhance its perceived monetary value. This could be effectively communicated through marketing campaigns that showcase real-life applications or testimonials from users who have experienced the benefits of the Vision Pro firsthand for sport-related purposes.

#### **5.11 What is the relationship between perceived monetary value and perceived financial risk?**

The results showed that perceived financial risk had a negative influence on perceived monetary value. That is, the more consumers believed they would waste their money by purchasing the Vision Pro, the less likely they were to believe that the Vision Pro would offer value for money. This finding is significant as it underscores the impact of risk perception on consumer valuation of products, aligning with the theories of behavioral economics that

emphasize the role of loss aversion in decision-making (Kahneman & Tversky, 2013). That is, Kahneman and Tversky (2013) introduced prospect theory, which challenged the traditional economic view that consumers tend to always make rational decisions to maximize gains. Fundamentally, prospect theory shows that consumer decision-making is not always rational and is heavily dictated by how choices are presented (Kahneman & Tversky, 2013). It argues that consumers make decisions based on the potential value of losses and gains rather than the final outcome (Kahneman & Tversky, 2013).

As it relates to the Apple Vision Pro, one possible explanation for why consumers are less likely to believe the technology would offer value for money if consumers believed they would waste their money by purchasing the Vision Pro is a consequence of loss aversion. That is, consumers tend to weigh losses more heavily than gains. In other words, it is far more painful psychologically of losing \$10 than it is as finding satisfaction with the pleasure of gaining \$10. The idea of potentially wasting money (a loss) by purchasing the Vision Pro may have a more substantial impact on sport consumers' decision-making than the benefits (a gain) they could receive from purchasing the Vision Pro.

This finding contributes to the growing body of research on risk perception in consumer behavior. While previous studies have examined the relationship between perceived risk and marketing constructs such as involvement and trust (Mitchell, 1999), the investigation of the relationship between perceived financial risk and perceived monetary value in the context of the Apple Vision Pro offers a unique contribution. Smith and Colgate (2007) provided a comprehensive analysis of how organizations can create value for their customers such as

functional/instrumental, experiential/hedonic, symbolic/expressive, and cost/sacrifice value. To be sure, this also applies to how sport organizations and technology companies like Apple can create value for their customers. Moreover, Smith and Colgate (2007) highlight the application of their framework in marketing strategies, product development, and competitive advantage analysis.

#### **5.12 Does attitude mediate the relationship between perceived financial risk, perceived monetary value, and purchase intention?**

The results showed that perceived financial risk had an indirect negative effect on purchase intention through attitude. This suggests that while perceived financial risk directly influences consumers' attitudes, these attitudes then significantly shape consumers' purchase intention of the Apple Vision Pro. This mediating effect of attitude is consistent with the theory of reasoned action (Fishbein & Ajzen, 1975), which posits that a person's behavior is determined by their intention to perform the behavior, and this intention is influenced by their attitude toward the behavior. As it relates to the Apple Vision Pro, as consumers perceive higher financial risks, their attitude towards purchasing the product becomes more negative, subsequently decreasing their likelihood of purchasing the technology. I speculate that this could be because high financial risks elicit feelings of uncertainty and potential loss, which in turn, influences sport consumers' overall attitudes towards purchasing the Vision Pro.

Moreover, this mediation effect highlights the importance of managing financial risk perceptions in marketing strategies. As such, I recommend technology companies like Apple to address these risk perceptions. One way in which this could be accomplished is through effective

marketing communication strategies that reassure potential customers of any uncertainty related to the Apple Vision Pro. Examples of such include providing clear information about product warranties, return policies, and customer support to mitigate financial risk perceptions and positively influence attitudes, thereby leading to higher purchase intentions. These findings also suggest that marketers should focus on enhancing the positive aspects of their products to cultivate favorable attitudes among consumers. Strategies such as showcasing the unique features of the Vision Pro, emphasizing its benefits in enhancing the fan experience, and providing demonstrations or trials could effectively enhance positive attitudes and offset the negative impact of perceived financial risks.

### **5.13 Do consumers' attitudes influence their purchase intentions of the Apple Vision Pro?**

The results showed that attitude had a positive influence on purchase intention, which was consistent with the theory of planned behavior and the technology acceptance model (Ajzen, 1991; Davis, 1996; Karahanna et al., 1999; Kim et al., 2017). These theories consistently show that attitude toward behavior is a significant predictor of behavioral and purchase intentions (Ajzen, 1991; Davis, 1996; Karahanna et al., 1999; Kim et al., 2017). As it relates to the Apple Vision Pro, this finding suggests that the more consumers felt positive impressions of purchasing the Vision Pro, the more likely they were to purchase the Vision Pro in the foreseeable future.

The study's results emphasize the importance of creating and maintaining positive consumer attitudes towards new technological innovations like the Vision Pro. As such, I recommend Apple to engage in advertising campaigns that highlight the unique features and benefits of the Vision Pro. Moreover, given the impact of attitudes on purchase intention, I

recommend technology companies like Apple engage in continuous market research to better understand and address the factors that contribute to positive or negative consumer attitudes. For instance, technology companies can focus their attention on customer feedback at their brick and mortar stores. But perhaps most importantly, technology companies should be monitoring social media since it is a platform in which consumers tend to express their opinions about technologies quite often.

Finally, the findings suggest that any negative aspects related to the Vision Pro, whether real or perceived, need to be addressed promptly. For instance, if consumers have concerns about the cost, usability, or effectiveness of the product, these concerns should be mitigated through clear communication, user-friendly design, and demonstrating the product's value for money.

#### **5.14 Theoretical Implications**

This study, to the best of my knowledge, is the first one examining consumers' acceptance of the Apple Vision Pro. This study extended the technology acceptance model by introducing two variables, namely monetary value and perceived financial risk to better understand innovation adoption behaviors. This study reveals that perceived usefulness positively influences perceived monetary value. Conversely, it shows that perceived usefulness and perceived ease of use negatively influence perceived financial risk. Previously, there was a limited understanding of the roles perceived monetary value and perceived financial risk played in explaining sport consumers' adoption of technology. As such, this study fills this gap and provides sport organizations and other related stakeholders insights to help develop interventions and behavioral strategies and increase the adoption of the Apple Vision Pro.

The finding that perceived usefulness positively influences perceived monetary value is particularly noteworthy as it underscores the importance of beliefs and perceptions about the technology's usefulness and ease in determining the Apple Vision Pro's economic value. This adds a new dimension to the traditional TAM, suggesting that consumers are not only influenced by how useful and easy a technology is to use but also by how this usefulness translates into monetary value.

Moreover, the study reveals an inverse relationship between perceived usefulness and perceived ease of use with perceived financial risk, highlighting a complex interplay between these variables. This indicates that as consumers find a product more useful and easier to use, their perception of financial risk of purchasing the Vision Pro reduces. As such, I argue improving the usefulness and ease of use of the Apple Vision Pro can be an effective strategy in terms of alleviating financial risk perceptions. The theoretical contributions of this study provide a foundation for future researchers to examine consumers' adoption of technological innovations in sport contexts. Specifically, it entices researchers to explore how other psychological and economic factors might interact within the TAM to influence innovation adoption. For sport organizations and stakeholders, these insights offer strategic directions for product development, marketing, and communication strategies aimed at enhancing the perceived value and reducing the perceived financial risks of innovative products like the Apple Vision Pro.

### **5.15 Practical Implications**

The study provides key insights for sport practitioners. It reveals perceived financial risk negatively influences perceived monetary value of the Vision Pro. The practical implications of

this study's findings are particularly relevant for marketers and product developers of the Vision Pro. Because perceived financial risk of the Vision Pro can take away from the perceived value of the technology, I suggest Apple implement strategies aimed at reducing financial risk perceptions, such as offering money-back guarantees, extended warranties, or robust customer support. In doing so, it could improve the perceived value of the Vision Pro. I also recommend Apple to engage in transparent communication about product features, benefits, and comparison with competitors such as the Meta Quest Pro. This can potentially help mitigate the financial risk perceptions and therefore improve the perceived monetary value of the Vision Pro.

Moreover, this study reveals that factors such as perceived monetary value and perceived financial risk play a significant role in influencing consumer decisions to buy the Apple Vision Pro. Sport consumers are more likely to believe that the Vision Pro would offer value for money if they perceive the technology can improve their experience of watching sports. This emphasizes the importance for Apple to refine its marketing efforts to more effectively showcase how the Vision Pro can meet the desires of sport fans. Additionally, the more sport fans felt the Vision Pro would enhance their fan experience, the less likely consumers were to believe that they would waste their money purchasing the Vision Pro.

This suggests that fans would not regret their purchase decision of the Vision Pro as long as it provides them with an enhanced fan experience and meets their expectations. It is important to note that consumers regretting their purchase of a technology are a crucial consideration since it has the potential to lead to negative word of mouth and therefore sway others from purchasing the Vision Pro. Therefore, sports organizations might consider promoting this new technology by

showing how it enhances the fan experience and also indicating fans' purchase satisfaction of the Vision Pro despite the high cost. To further entice sports fans towards this technology, those in charge of Vision Pro's design and development should concentrate on incorporating unique features and content that enhance the overall fan experience.

Because the Vision Pro is priced at \$3,500, not all fans and consumers would be capable of purchasing this new technology despite its usefulness in terms of enhancing the fan experience. As such, it is consequential for Apple and other technology companies to keep affordability and accessibility at the forefront of decision-making strategies. One way in which Apple can make this technology more affordable is by bundling the Vision Pro with other products, such as iPhones, iPads, or Macbooks, at a discounted rate. In doing so, it can provide better value for consumers and may even entice consumers to purchase multiple Apple products. Moreover, Apple can partner with other companies and institutions to provide affordable financing options that go above and beyond what they currently offer such as longer-term financing payment plans. This could hopefully make the purchase of the Vision Pro more realistic for consumers and meet their expectations. Finally, Apple could partner with sport organizations to secure subsidies that make the Vision Pro more affordable for fans and low-income families.

#### **5.16 Limitations and Future Research**

This research has a few limitations. First, the sample did not represent the diverse user base of the Apple Vision Pro, as it is heavily skewed towards individuals who identify as White (60.40%) and as male (61.40%). To broaden the generalizability of these findings, future studies could aim to replicate this research with a more diverse and representative sample. Longitudinal



studies could also be used to observe how attitudes and purchase intentions evolve over time, since it is highly likely that consumers will gain more exposure to and understanding of the Vision Pro in the days ahead.

Moreover, because this study primarily focused on the Apple Vision Pro, the findings are not generalizable to other sports technologies. As such, it would be beneficial to extend this research to other emerging sports technologies to determine the applicability of the findings across various contexts. Another limitation of this study is that it failed to include sport-related variables to reveal the uniqueness of sport. Therefore, additional research should include sport-related variables in the theoretical model such as team identification, fan identification, sport commitment, and sport involvement. Investigating the role of other external factors, such as social influence, brand loyalty, or economic conditions, could also provide a more comprehensive understanding of the factors influencing innovation adoption behavior. Lastly, conducting qualitative studies using methods such as interviews or focus groups could provide deeper insights not captured using survey methods related to consumers' adoption of sports technology. Specifically, using qualitative studies to understand the underlying mechanisms driving innovation adoption in sport contexts would be helpful.

## **Chapter 6**

### **Conclusion**

This dissertation examined the factors influencing sports fans' purchase intentions of the Apple Vision Pro through three interrelated studies. Each study sought to examine different factors, namely team identification, constructs from innovation diffusion theory, perceived monetary value, and perceived financial risk. The first study focused on the role of team identification in shaping fans' intentions to purchase the Vision Pro. Understanding the differential impacts of various identity dimensions of team identification with the TAM revealed how emotional connections to sports teams significantly influence perceived usefulness, perceived ease of use, and attitudes toward purchasing the technological innovation.

Building on the first study, the second study in this dissertation integrated constructs from innovation diffusion theory with the TAM and revealed that fans' beliefs about how well the Vision Pro fits well with their existing lifestyle (compatibility), the ability to experiment with the Vision Pro before purchasing (trialability), and the ease of understanding and using the Vision Pro (complexity) are consequential factors in terms of subsequently influencing perceived usefulness, perceived ease of use, and purchase intention. Finally, the third study integrated perceived monetary value and perceived financial risk with the TAM to better understand fans' intentions to purchase the Vision Pro. The study found that perceived financial risk had an indirect negative effect on purchase intention through attitude. This study complements the first and second study of this dissertation by incorporating an economic perspective to better elucidate why and how fans develop intentions to purchase the Vision Pro.

The results of all three studies provide a more holistic understanding of fans' intentions to purchase technological innovations in sport contexts. For instance, the significant influence of team identification, namely private evaluation (one of the identity dimensions) on perceived usefulness, suggests that fans' emotional connection with their sports team can improve their perception of a technological innovation in terms of regarding it as beneficial and useful to enhancing their fan experience. However, other factors such as compatibility, trialability, and complexity is also important in terms of translating fans' emotional connection into actual purchase of the Vision Pro. These factors show that to get more fans to purchase the Vision Pro does not only depend on fans' strong emotional connection but also the degree to which they believe the Apple Vision Pro would be compatible with their existing lifestyle. Moreover, the economic perspective of study three sheds light on the important role of financial considerations. While team identification and constructs from innovation diffusion theory positively influences fans' intentions to adopt the Vision Pro, the final decision to purchase the Vision Pro heavily relies on the perceived cost-benefit ratio. Because the Vision Pro is priced at \$3,500 and is relatively expensive compared to many other technological innovations for sports fans, addressing the financial concerns of the Vision Pro by engaging in flexible payment options, trade-in programs, and effective communication of the Vision Pro's value can increase sales.

This dissertation validates the salient constructs of the TAM, namely perceived usefulness and perceived ease of use. It shows that it remains a significant predictor of technology adoption. However, now we know that in the context of sport technology, these salient constructs are influenced by the emotional and social dimensions of sport fandom, namely

team identification. Specifically, this dissertation reveals that various identity dimensions differentially influences fans' perceptions of a technology's usefulness and ease of use. That is, sport fans with strong emotional connections to their teams are more likely to perceive sport technologies like the Apple Vision Pro as valuable and user-friendly.

Moreover, this dissertation introduces an innovative approach-the integrated IDT-TAM model-to better explain consumers' adoption of sport technologies. This model, which combines constructs of innovation diffusion theory and the TAM, offers a more comprehensive and robust explanation compared to relying solely on the TAM. It demonstrates that constructs from innovation diffusion theory can positively influence fans' adoption of the Apple Vision Pro through perceived usefulness and perceived ease of use. In essence, it presents a fresh perspective on examining consumers' adoption of sport technologies.

Finally, now we know that in the context of sport technology, perceived financial risk indirectly influences purchase intention through attitude. This means that while perceived financial risk directly influences consumers' attitudes, these attitudes subsequently influence consumers' purchase intention of the Apple Vision Pro. The three studies in this dissertation collectively contribute to a deeper and more nuanced understanding of sport fans' purchase intentions of the Apple Vision Pro. It shows that a complex interplay of various factors influences sports fans' intentions to purchase the Apple Vision Pro.

## References

*Adoption of communication technologies.* (2024). Our World in Data.

<https://ourworldindata.org/grapher/ict-adoption>

Agarwal, R., & Prasad, J. (1999). Are Individual Differences Germane to the Acceptance of New Information Technologies? *Decision Sciences*, 30(2), 361–391.

<https://doi.org/10.1111/j.1540-5915.1999.tb01614.x>

Agarwal, S., & Teas, R. K. (2001). Perceived value: mediating role of perceived risk. *Journal of Marketing theory and Practice*, 9(4), 1-14.

Al-Jabri, I., & Sohail, M. S. (2012). Mobile banking adoption: Application of diffusion of innovation theory. *Journal of electronic commerce research*, 13(4), 379-391.

Allison, P. D. (2003). Missing data techniques for structural equation modeling. *Journal of Abnormal Psychology*, 122(4), 545–557.

Anderson, J. C., & Gerbing, D.W. (1988). Structural equation modeling in practice: A review and recommended two-step approach. *Psychological Bulletin*, 103(3), 411–423.

Apple. (2023). *Apple Vision Pro*. Apple. <https://www.apple.com/apple-vision-pro/>

Ajzen, I. (1985). From intention to actions: A theory of planned behavior. In J. Kuhl, & J. Beckmann (Eds.), *Action-Control: From Cognition to Behavior* (pp. 11-39). Heidelberg: Springer

Ajzen, I. (2005). *Attitudes, personality, and behaviour (second edition)*. New York, NY: Open University Press.

Ajzen, I. (1991). The Theory of Planned Behavior. *Organizational Behavior and Human*

- Decision Processes*, 50(2), 179–211.
- Ajzen, I., & Fishbein, M. (1980). *Understanding Attitudes and Predicting Social Behavior*. Prentice-Hall.
- Ashmore, R. D., Deaux, K., & McLaughlin-Volpe, T. (2004). An organizing framework for collective identity: Articulation and significance of multi-dimensionality. *Psychological Bulletin*, 130(1), 80\_114. doi:10.1037/0033-2909.130.1.80
- Asparohov, T., & Muthén, B. (2009). Exploratory structural equation modeling. *Structural Equation Modeling*, 16(3), 397–438.
- Baishya, K., & Samalia, H. V. (2020). Extending unified theory of acceptance and use of technology with perceived monetary value for smartphone adoption at the bottom of the pyramid. *International Journal of Information Management*, 51, 102036.
- Browne MW, Cudeck R. Alternative ways of assessing model fit. In: Bollen KA, Long JS, editors. *Testing structural equation models*. Newbury Park, CA: Sage; 1993. p.136–62.
- Barnhoorn, J. S., Haasnoot, E., Bocanegra, B. R., & van Steenbergen, H. (2014). QRTEngine: An easy solution for running online reaction time experiments using Qualtrics. *Behavior*
- Billig, M. (1995). *Banal nationalism*. London: Sage.
- Boksberger, P. E., & Melsen, L. (2011). Perceived value: a critical examination of definitions, concepts and measures for the service industry. *Journal of services marketing*, 25(3), 229-240.

- Bouncken, R.B., Fredrich, V., Ritala, P. and Kraus, S. (2018), “Coopetition in new product development alliances: advantages and tensions for incremental and radical innovation”, *British Journal of Management*, Vol. 29 No. 3, pp. 391-410.
- Branscombe, N. R., & Wann, D. L. (1992). Role of identification with a group, arousal, categorization processes, and self-esteem in sports spectator aggression. *Human Relations*, 45(10), 1013–1033.
- Brown, R. (2000). Social identity theory: Past achievements, current problems and future challenges. *European journal of social psychology*, 30(6), 745-778.
- Chen, C. C., & Tsai, J. L. (2019). Determinants of behavioral intention to use the Personalized Location-based Mobile Tourism Application: An empirical study by integrating TAM with ISSM. *Future Generation Computer Systems*, 96, 628-638.
- Childers, T. L., Carr, C. L., Peck, J., & Carson, S. (2001). Hedonic and utilitarian motivations for online retail shopping behavior. *Journal of Retailing*, 77(4), 511–535.  
[https://doi.org/10.1016/S0022-4359\(01\)00056-2](https://doi.org/10.1016/S0022-4359(01)00056-2).
- Conchar, M. P., Zinkhan, G. M., Peters, C., & Olavarrieta, S. (2004). An integrated framework for the conceptualization of consumers’ perceived-risk processing. *Journal of the Academy of Marketing Science*, 32(4), 418–436.
- Conner, M., & Armitage, C. J. (1998). Extending the Theory of Planned Behavior: A Review and Avenues for Further Research. *Journal of Applied Social Psychology*, 28(15), 1429–1464. <https://doi.org/10.1111/j.1559-1816.1998.tb01685>.

- Cronin, J. J., Brady, M. K., & Hult, T. G. (2000). Assessing the effects of quality, value, and customer satisfaction on consumer behavioral intentions in service environments. *Journal of Retailing*, 76, 193–218
- Currás-Pérez, R., & Sánchez-García, I. (2012). Satisfaction and loyalty to a website: The Moderating effect of perceived risk. *EsicMarket Economic and Business Journal*, 141, 183-207.
- Czaja, S. J., Charness, N., Fisk, A. D., Hertzog, C., Nair, S. N., Rogers, W. A., & Sharit, J. (2006). Factors predicting the use of technology: findings from the Center for Research and Education on Aging and Technology Enhancement (CREATE). *Psychology and aging*, 21(2), 333.
- Damanpour, F., & Evan, W. M. (1984). Organizational Innovation and Performance: The Problem of “Organizational Lag.” *Administrative Science Quarterly*, 29(3), 392. <https://doi.org/10.2307/2393031>
- Damanpour, F., & Schneider, M. (2006). Phases of the Adoption of Innovation in Organizations: Effects of Environment, Organization and Top Managers<sup>1</sup>. *British Journal of Management*, 17(3), 215–236. <https://doi.org/10.1111/j.1467-8551.2006.00498>.
- Davis, F. D. (1989). Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology. *MIS Quarterly*, 13(3), 319–340. <https://doi.org/10.2307/249008>
- Davis, F. D., Bagozzi, R. P., & Warshaw, P. R. (1989). User Acceptance of Computer Technology: a Comparison of Two Theoretical Models. *Management Science*, 35(8), 982–1003. <https://doi.org/10.1287/mnsc.35.8.982>



- Davis, F.D. (1986). A technology acceptance model for empirically testing new end-user information systems: theory and results. Doctoral dissertation. MIT Sloan School of Management, Cambridge, MA
- Davis, J. M., & Yi, M. Y. (2012). User disposition and extent of web utilization: A trait hierarchy approach. *International Journal of Human-Computer Studies*, 70(5), 346–363.
- Dodds, W. B., Monroe, K. B., & Grewal, D. (1991). Effects of Price, Brand, and Store Information on Buyers' Product Evaluations. *Journal of Marketing Research*, 28(3), 307–319.
- Dowling, G. R., & Staelin, R. (1994). A model of perceived risk and intended risk-handling activity. *Journal of consumer research*, 21(1), 119-134.
- Eastlick, M. A., Lotz, S. L., & Warrington, P. (2006). Understanding online B-to-C relationships: An integrated model of privacy concerns, trust, and commitment. *Journal of Business Research*, 59(8), 877–886. <https://doi.org/10.1016/j.jbusres.2006.02.006>
- Eyal, P., David, R., Andrew, G., Zak, E., & Ekaterina, D. (2021). Data quality of platforms and panels for online behavioral research. *Behavior research methods*, 1-20.
- Faul, F., Erdfelder, E., Lang, A.-G., & Buchner, A. (2007). G\*Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior Research Methods*, 39(2), 175–191. <https://doi.org/10.3758/bf03193146>
- Ford, J. D., Ford, L. W., & D'Amelio, A. (2008). Resistance to Change: The Rest of the Story. *Academy of Management Review*, 33(2), 362–377.
- Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable

- variables and measurement error. *Journal of marketing research*, 18(1), 39-50.
- Funk, D. C. (2008). *Consumer Behaviour for Sport & Events: Marketing Action*. Jordon Hill, Oxford: Elsevier.
- Funk, D. C., Alexandris, K., & Mcdonald, H. (2022). *Sport Consumer Behaviour: Marketing Strategies*. Routledge, Taylor & Francis Group.
- Funk, D. C., Ridinger, L. L., & Moorman, A. M. (2004). Exploring origins of involvement: Understanding the relationship between consumer motives and involvement with professional sport teams. *Leisure Sciences*, 26(1), 35–61.
- Funk, D. C., & James, J. D. (2006). Consumer Loyalty: The Meaning of Attachment in the Development of Sport Team Allegiance. *Journal of Sport Management*, 20(2), 189–217. <https://doi.org/10.1123/jsm.20.2.189>
- Gans, J., & Nagaraj, A. (2023, June 14). *What Is Apple's Vision Pro Really For?* Harvard Business Review. <https://hbr.org/2023/06/what-is-apples-vision-pro-really-for>
- Gefen, D., Karahanna, E., & Straub, D. W. (2003). Trust and TAM in Online Shopping: an Integrated Model. *MIS Quarterly*, 27(1), 51–90. <https://doi.org/10.2307/30036519>
- Gao, T., Rohm, A. J., Sultan, F., & Pagani, M. (2013). Consumers un-tethered: A threemarket empirical study of consumers' mobile marketing acceptance. *Journal of Business Research*, 66(12), 2536–2544. <https://doi.org/10.1016/j.jbusres.2013.05.046>.
- Globenewswire. (2023, May 3). *Global Sports Market Forecast to 2032: Sector is Expected to Reach \$623.63 Billion in 2027 at a CAGR of 5%*. GlobeNewswire News Room. <https://www.globenewswire.com/en/news-release/2023/05/03/2660537/28124/en/Global->

Sports-Market-Forecast-to-2032-Sector-is-Expected-to-Reach-623-63-Billion-in-2027-at-a-CAGR-of-5.html

Goodman, J. K., & Paolacci, G. (2017). Crowdsourcing consumer research. *Journal of Consumer Research*, 44(1), 196-210.

Goldberg, L. R. (1992). The development of markers for the big five factor structure. *Psychological Assessment*, 4(1), 26\_42. doi:10.1037/1040-3590.4.1.26

Gray, G. T., & Wert-Gray, S. (2011). Customer retention in sports organization marketing: examining the impact of team identification and satisfaction with team performance. *International Journal of Consumer Studies*, 36(3), 275–281.  
<https://doi.org/10.1111/j.1470-6431.2011.00999>.

Guo, X., Sun, Y., Wang, N., Peng, Z., & Yan, Z. (2012). The dark side of elderly acceptance of preventive mobile health services in China. *Electronic Markets*, 23(1), 49–61.  
<https://doi.org/10.1007/s12525-012-0112-4>

Gurin, P., & Townsend, A. (1986). Properties of gender identity and their implications for gender consciousness. *British Journal of Social Psychology*, 25(2), 139-148.

Gwinner, K., & Bennett, G. (2008). The Impact of Brand Cohesiveness and Sport Identification on Brand Fit in a Sponsorship Context. *Journal of Sport Management*, 22(4), 410–426.  
<https://doi.org/10.1123/jsm.22.4.410>

Gwinner, K., & Swanson, S. R. (2003). A model of fan identification: antecedents and sponsorship outcomes. *Journal of Services Marketing*, 17(3), 275–294.  
<https://doi.org/10.1108/08876040310474828>

Ha, S., & Stoel, L. (2009). Consumer e-shopping acceptance: Antecedents in a technology

- acceptance model. *Journal of business research*, 62(5), 565-571.
- Ha, J.-P., Kang, S. J., & Kim, Y. (2017). Sport fans in a “smart sport” (SS) age: drivers of smartphone use for sport consumption. *International Journal of Sports Marketing and Sponsorship*, 18(3), 281–297. <https://doi.org/10.1108/ijsms-08-2017-093>
- Hackl, C. (2023, November 10). *What Leaders Need to Know About Spatial Computing*. Harvard Business Review. <https://hbr.org/2023/11/what-leaders-need-to-know-about-spatial-computing>
- Hair, J. F., Black, W., Babin, B., & Anderson, R. (2010). *Multivariate data analysis: A global perspective*. Saddle River, NJ: Pearson Prentice Hall.
- Hart, S.L., & London, T. (2011). *Next generation business strategies for the base of the pyramid: New approaches for building mutual value*. Upper Saddle River, NJ: FT Press.
- Haugstvedt, A., & J. Krogstie. (2012). Mobile augmented reality for cultural heritage: A technology acceptance study. *IEEE International Symposium on Mixed and Augmented Reality (ISMAR)*, p. 247-255, doi: 10.1109/ISMAR.2012.6402563..
- Heere, B., & James, J. D. (2007a). Stepping Outside the Lines: Developing a Multi-dimensional Team Identity Scale Based on Social Identity Theory. *Sport Management Review*, 10(1), 65–91. [https://doi.org/10.1016/s1441-3523\(07\)70004-9](https://doi.org/10.1016/s1441-3523(07)70004-9)
- Heere, B., Walker, M., Yoshida, M., Ko, Y. J., Jordan, J., & James, J.D. (2011b). Brand community development through associated communities: Grounding community measurement within social identity theory. *Journal of Marketing Theory and Practice*, 19(4), 407-422. doi:10.2753/MTP1069-6679190404

- Heere, B., James, J. D., Yoshida, M., & Scremin, G. (2011). The effect of associated group identities on team identity. *Journal of Sport Management*, 25(6), 606–621.
- Heere, B., Walker, M., Yoshida, M., Ko, Y. J., Jordan, J. S., & James, J. D. (2011). Brand Community Development Through Associated Communities: Grounding Community Measurement Within Social Identity Theory. *Journal of Marketing Theory and Practice*, 19(4), 407–422. <https://doi.org/10.2753/mtp1069-6679190404>
- Heere, B., Walker, M., Gibson, H., Thapa, B., Geldenhuys, S., & Coetzee, W. (2013). The power of sport to unite a nation: The social value of the 2010 FIFA World Cup in South Africa. *European Sport Management Quarterly*, 13(4), 450–471.
- Hoeber, L., & Hoeber, O. (2012). Determinants of an Innovation Process: A Case Study of Technological Innovation in a Community Sport Organization. *Journal of Sport Management*, 26(3), 213–223. <https://doi.org/10.1123/jsm.26.3.213>
- Hu, P. J., Lin, C., Chen, H. (2005). User acceptance of intelligence and security informatics technology: a study of COPLINK. *J. Am. Soc. Inf. Sci. Technol.* 56(3), 235–244
- Huddy, L. (2001). From social to political identity: A critical examination of social identity theory. *Political psychology*, 22(1), 127–156.
- Hur, Y., Ko, Y. J., & Claussen, C. L. (2012). Determinants of using sports web portals: an empirical examination of the Sport Website Acceptance Model. *International Journal of Sports Marketing and Sponsorship*, 13(3), 6–25. <https://doi.org/10.1108/ijms-13-03-2012-b003>
- Isaacson, W. (2014). *The innovators: how a group of hackers, geniuses, and geeks created the*

*digital revolution*. Simon & Schuster.

- Jakicic, J. M., Davis, K. K., Rogers, R. J., King, W. C., Marcus, M. D., Helsel, D., ... & Belle, S. H. (2016). Effect of wearable technology combined with a lifestyle intervention on long-term weight loss: the IDEA randomized clinical trial. *Jama*, *316*(11), 1161-1171.
- James, J. D., & Trail, G. T. (2008). The relationship between team identification and sport consumption intentions. *International Journal of Sport Management*, *9*(4), 427-440.
- Kang, S. J., Ha, J. P., & Hambrick, M. E. (2015). A mixed-method approach to exploring the motives of sport-related mobile applications among college students. *Journal of Sport Management*, *29*(3), 272–290. <https://doi.org/10.1123/jsm.2013-0065>
- Kahneman, D., & Tversky, A. (2013). Prospect theory: An analysis of decision under risk. In *Handbook of the fundamentals of financial decision making: Part I* (pp. 99-127).
- Kaplanidou, K. (2006). Affective Event and Destination Image: Their Influence on Olympic Travelers' Behavioral Intentions. *Event Management*, *10*(2), 159–173.  
<https://doi.org/10.3727/152599507780676706>
- Karahanna, E., Straub, D. W., & Chervany, N. L. (1999). Information technology adoption across time: A cross-sectional comparison of pre-adoption and post-adoption beliefs. *MIS quarterly*, 183-213.
- Kim, Y., Kim, S., & Rogol, E. (2017). The Effects of Consumer Innovativeness on Sport Team Applications Acceptance and Usage. *Journal of Sport Management*, *31*(3), 241–255.  
<https://doi.org/10.1123/jsm.2015-0338>
- Kim, H. Y., Lee, J. Y., Mun, J. M., & Johnson, K. K. (2017). Consumer adoption of smart in-

- store technology: assessing the predictive value of attitude versus beliefs in the technology acceptance model. *International Journal of Fashion Design, Technology and Education*, 10(1), 26-36.
- Kleijnen, M., Lee, N., & Wetzels, M. (2009). An exploration of consumer resistance to innovation and its antecedents. *Journal of Economic Psychology*, 30(3), 344–357.  
<https://doi.org/10.1016/j.joep.2009.02.004>
- Kobarg, S., Stumpf-Wollersheim, J. and Welpel, I.M. (2019), “More is not always better: effects of collaboration breadth and depth on radical and incremental innovation performance at the project level”, *Research Policy*, Vol. 48 No. 1, pp. 1-10.
- Kotler, P., & Keller, K. L. (2016). *Marketing management*. Pearson/Prentice Hall.
- Koufaris, M., & Hampton-Sosa, W. (2004). The development of initial trust in an online company by new customers. *Information & Management*, 41(3), 377–397.  
<https://doi.org/10.1016/j.im.2003.08.004>
- Kwak, D. H., & McDaniel, S. R. (2011). Using an extended technology acceptance model in exploring antecedents to adopting fantasy sports league websites. *International Journal of Sports Marketing & Sponsorship*, 12(3), 240–253. <https://doi.org/10.1108/IJSMS-12-03-2011-B005>
- Laukkanen, T., Sinkkonen, S., Kivijärvi, M., & Laukkanen, P. (2007). Innovation resistance among mature consumers. *Journal of Consumer Marketing*, 24(7), 419–427.  
<https://doi.org/10.1108/07363760710834834>
- Lee, W.I., & Chao, P.J. (2004). The research of information Technology Acceptance Model of

- electronic patient record system in health care industry's employees-An example of central and southern Taiwan. *Health Management*, 5(2), 243–269.
- Lee, Y. H., Hsieh, Y. C., & Hsu, C. N. (2011). Adding innovation diffusion theory to the technology acceptance model: Supporting employees' intentions to use e-learning systems. *Journal of Educational Technology & Society*, 14(4), 124-137.
- Lee, Y. K., Park, J. H., Chung, N., & Blakeney, A. (2012). A unified perspective on the factors influencing usage intention toward mobile financial services. *Journal of Business Research*, 65(11), 1590–1599. <https://doi.org/10.1016/j.jbusres.2011.02.044>.
- Legrís, P., Ingham, J., & Collerette, P. (2003). Why do people use information technology? A critical review of the technology acceptance model. *Information & Management*, 40(3), 191–204. [https://doi.org/10.1016/s0378-7206\(01\)00143-4](https://doi.org/10.1016/s0378-7206(01)00143-4)
- Liu, F., Zhao, X., Chau, P. Y., & Tang, Q. (2015). Roles of perceived value and individual differences in the acceptance of mobile coupon applications. *Internet Research*, 25(3), 471-495.
- López-Nicolás, C., Molina-Castillo, F. J., & Bouwman, H. (2008). An assessment of advanced mobile services acceptance: Contributions from TAM and diffusion theory models. *Information & Management*, 45(6), 359–364. <https://doi.org/10.1016/j.im.2008.05.001>
- Luhtanen, R., & Crocker, J. (1992). A collective self-esteem scale: Self-evaluation of one's social identity. *Personality and social psychology bulletin*, 18(3), 302-318.
- Mael, F. A., & Tetrick, L. E. (1992). Identifying organizational identification. *Educational and psychological measurement*, 52(4), 813-824.



- Mahan, J. E., III. (2011). Examining the predictors of consumer response to sport marketing via digital social media. *International Journal of Sport Management and Marketing*, 9(3–4), 254–267. <https://doi.org/10.1504/IJSMM.2011.041575>
- Manis, K. T., & Choi, D. (2019). The virtual reality hardware acceptance model (VR-HAM): Extending and individuating the technology acceptance model (TAM) for virtual reality hardware. *Journal of Business Research*, 100, 503-513.
- Marangunić, N., & Granić, A. (2014). Technology acceptance model: a literature review from 1986 to 2013. *Universal Access in the Information Society*, 14(1), 81–95. <https://doi.org/10.1007/s10209-014-0348-1>
- Marquez, A., Cianfrone, B. A., & Kellison, T. (2020). Factors affecting spectators' adoption of digital ticketing: the case of interscholastic sports. *International Journal of Sports Marketing and Sponsorship*, 21(3), 527–541. <https://doi.org/10.1108/ij sms-07-2019-0080>
- Meister, D.B., & Compeau, D.R. (2002). "Infusion of Innovation Adoption: An Individual Perspective," Proceedings of the ASAC, Winnipeg, Manitoba.
- Milano, M., & Chelladurai, P. (2011). Gross Domestic Sport Product: The Size of the Sport Industry in the United States. *Journal of Sport Management*, 25(1), 24–35. <https://doi.org/10.1123/jsm.25.1.24>
- Mitchell, V. W. (1999). Consumer perceived risk: conceptualisations and models. *European Journal of marketing*, 33(1/2), 163-195.
- Montano, D., & Kasprzyk, D. (2002). The theory of reasoned action and the theory of planned behavior. In K. Glanz, B. Rimer, & F.C. Lewis (Eds.), *Health behavior and health and health education: Theory research and practice* (pp. 67-98). San Francisco, CA: Jossey-

Bass.

- Moore, G. C., & Benbasat, I. (1991). Development of an Instrument to Measure the Perceptions of Adopting an Information Technology Innovation. *Information Systems Research*, 2(3), 192–222. <https://doi.org/10.1287/isre.2.3.192>
- Muk, A., & Chung, C. (2015). Applying the technology acceptance model in a two-country study of SMS advertising. *Journal of Business Research*, 68(1), 1–6. <https://doi.org/10.1016/j.jbusres.2014.06.001>.
- Pai, F.-Y., & Huang, K.-I. (2011). Applying the Technology Acceptance Model to the introduction of healthcare information systems. *Technological Forecasting and Social Change*, 78(4), 650–660. <https://doi.org/10.1016/j.techfore.2010.11.007>
- Peer, E., Brandimarte, L., Samat, S., & Acquisti, A. (2017). Beyond the Turk: Alternative platforms for crowdsourcing behavioral research. *Journal of experimental social psychology*, 70, 153-163.
- Petrick, J. F. (2004). The roles of quality, value, and satisfaction in predicting cruise passengers' behavioral intentions. *Journal of Travel Research*, 42(4), 397–407.
- Phinney, J. S. (1992). The multigroup ethnic identity measure: A new scale for use with diverse groups. *Journal of adolescent research*, 7(2), 156-176.
- Pinker, S. (2019). *Enlightenment Now: the case for reason, science, humanism and progress*. Penguin.
- Plouffe, C. R., Hulland, J. S., & Vandenbosch, M. (2001). Research Report: Richness Versus Parsimony in Modeling Technology Adoption Decisions—Understanding Merchant

- Adoption of a Smart Card-Based Payment System. *Information Systems Research*, 12(2), 208–222. <https://doi.org/10.1287/isre.12.2.208.9697>
- Premzaai, K.; Castaldo, S.; Grosso, M.; Raman, P.; Brudvig, S.; and Hofacker, C. (2010). Customer information sharing with e-vendors: The roles of incentives and trust. *International Journal of Electronic Commerce*, 14, (3), 63–74.
- Naraine, M. L., & Parent, M. M. (2016). Illuminating centralized users in the social media ego network of two national sport organizations. *Journal of Sport Management*, 30(6), 689-701.
- Neelamegham, R., and Jain, D. (1999). Consumer choice process for experience goods: An econometric model and analysis. *Journal of marketing research*, 36 (3), 373–386.
- Oh, H., Jeong, M., & Baloglu, S. (2013). Tourists' adoption of self-service technologies at resort hotels. *Journal of Business Research*, 66(6), 692–699. <https://doi.org/10.1016/j.jbusres.2011.09.005>.
- Ostermeijer, F., Koster, H. R. A., van Ommeren, J., & Nielsen, V. M. (2022). Automobiles and urban density. *Journal of Economic Geography*, 22(5). <https://doi.org/10.1093/jeg/lbab047>
- Ram, S., & Sheth, J. N. (1989). Consumer Resistance to Innovations: The Marketing Problem and its solutions. *Journal of Consumer Marketing*, 6(2), 5–14. <https://doi.org/10.1108/eum0000000002542>
- Ratten, V. (2016). Sport innovation management: towards a research agenda. *Innovation*, 18(3), 238–250. <https://doi.org/10.1080/14479338.2016.1244471>

- Ratten, V. (2020). Sport technology: A commentary. *The Journal of High Technology Management Research*, 31(1), 100383.
- Ratten, V. & Ferreira, J.J. (2016a). Sport entrepreneurship and innovation – concepts and theory. In V. Ratten & J.J. Ferreira (Eds.). *Sport Entrepreneurship and Innovation*. London: Routledge.
- Ratten, V. & Ferreira, J.J. (2016b). Sport entrepreneurship and the emergence of opportunities: Towards a future research agenda. In V. Ratten & J.J. Ferreira (Eds.), *Sport Entrepreneurship and Innovation*. London: Routledge.
- Raykov, T., & Marcoulides, G. A. (2012). *A first course in structural equation modeling*. routledge.
- Reinstein, D.A., & Snyder, C.M. (2005). The influence of expert reviews on consumer demand for experience goods: A case study of movie critics. *Journal of Industrial Economics*, 53, (1), 27–51.
- Rogers, E.M. (1962) *Diffusion of Innovations*. Free Press, New York.
- Rogers, E.M., & Shoemaker, F.F. (1971). *Communication of Innovations*, The Free Press, New York, NY.
- Rogers, E. M. (2003). *Diffusion of innovations* (5th ed.). Free Press. (Original work published 1962)
- Rogers, Everett. (1983). *Diffusion of Innovations*. New York: The Free Press.
- Rogers, E. M. (1995). Diffusion of Innovations: modifications of a model for telecommunications. *Die diffusion von innovationen in der telekommunikation*, 25-38.

- Rogers, E. M., Singhal, A., & Quinlan, M. M. (2014). Diffusion of innovations. In *An integrated approach to communication theory and research* (pp. 432-448). Routledge.
- Roser, M. (2023, February 22). *Technology over the long run: zoom out to see how dramatically the world can change within a lifetime*. Our World in Data.  
<https://ourworldindata.org/technology-long-run>
- Sagnier, C., Loup-Escande, E., Lourdeaux, D., Thouvenin, I., & Valléry, G. (2020). User acceptance of virtual reality: an extended technology acceptance model. *International Journal of Human–Computer Interaction*, 36(11), 993-1007.
- Sellers, R. M., Caldwell, C. H., Schmeelk-Cone, K., & Zimmerman, M. A. (2003). The role of racial identity and racial discrimination in the mental health of African American young adults. *Journal of Health and Social Behavior*, 44(3), 302\_317. doi:10.2307/1519781
- Sharifzadeh, M. S., Damalas, C. A., Abdollahzadeh, G., & Ahmadi-Gorgi, H. (2017). Predicting adoption of biological control among Iranian rice farmers: An application of the extended technology acceptance model (TAM2). *Crop Protection*, 96, 88–96.  
<https://doi.org/10.1016/j.cropro.2017.01.014>
- Shapiro, L., Reams, L., & So, K. (2019) Is it worth the price? The role of perceived financial risk, identification, and perceived value in purchasing pay-per-view broadcasts of combat sports, *Sport Management Review*, 22:2, 235-246, DOI: 10.1016/j.smr.2018.03.002
- Shaw, N., & Sergueeva, K. (2019). The non-monetary benefits of mobile commerce: Extending UTAUT2 with perceived value. *International journal of information management*, 45,

44-55.

- Shah, R., & Goldstein, S. M. (2006). Use of structural equation modeling in operations management research: Looking back and forward. *Journal of Operations Management*, 24, 148–169.
- Shonk, D. J., & Chelladurai, P. (2008). Service Quality, Satisfaction, and Intent to Return in Event Sport Tourism. *Journal of Sport Management*, 22(5), 587–602.  
<https://doi.org/10.1123/jsm.22.5.587>
- Smith, J. B., & Colgate, M. (2007). Customer value creation: a practical framework. *Journal of marketing Theory and Practice*, 15(1), 7-23.
- Solomon, M. R. (2019). *Consumer behavior : Buying, having, and being* (13th ed.). Pearson.
- Song, J., Kim, J., & Cho, K. (2018). Understanding users' continuance intentions to use smart-connected sports products. *Sport Management Review*, 21(5), 477–490.  
<https://doi.org/10.1016/j.smr.2017.10.004>
- Sun, H., & Zhang, P. (2006). The role of moderating factors in user technology acceptance. *International journal of human-computer studies*, 64(2), 53-78.
- Sutton, S. (1998). Predicting and Explaining Intentions and Behavior: How Well Are We Doing? *Journal of Applied Social Psychology*, 28(15), 1317–1338.  
<https://doi.org/10.1111/j.1559-1816.1998.tb01679>.
- Sweeney, J. C., & Soutar, G. N. (2001). Consumer perceived value: The development of a multiple item scale. *Journal of Retailing*, 77(2), 203–220.
- Szmigin, I., & Foxall, G. (1998). Three forms of innovation resistance: the case of retail payment

methods. *Technovation*, 18(6-7), 459–468. [https://doi.org/10.1016/s0166-4972\(98\)00030-](https://doi.org/10.1016/s0166-4972(98)00030-3)

3

Tajfel, H., & Turner, J. C. (2004). The social identity theory of intergroup behavior. In *Political psychology* (pp. 276-293). Psychology Press.

Talwar, S., Talwar, M., Kaur, P., & Dhir, A. (2020). Consumers' resistance to digital innovations: A systematic review and framework development. *Australasian Marketing Journal (AMJ)*, 28(4). <https://doi.org/10.1016/j.ausmj.2020.06.014>

Tan, M., & Teo, T. S. (2000). Factors influencing the adoption of Internet banking. *Journal of the AIS*, 1(5), 1–42.

Tandon, A., Dhir, A., Talwar, S., Kaur, P., & M'antym'aki, M. (2022). Social media induced fear of missing out (FoMO) and phubbing: Behavioural, relational and psychological outcomes. *Technological Forecasting and Social Change*, 174(September 2021). Doi: 10.1016/j.techfore.2021.121149

Tandon, A., Dhir, A., Talwar, S., Kaur, P., & M'antym'aki, M. (2021). Dark consequences of social media-induced fear of missing out (FoMO): Social media stalking, comparisons, and fatigue. *Technological Forecasting and Social Change*, 171, Article 120931. <https://doi.org/10.1016/j.techfore.2021.120931>

Tjørndal, A. (2017). Sport innovation: developing a typology. *European Journal for Sport and Society*, 14(4), 291–310. <https://doi.org/10.1080/16138171.2017.1421504>

Torres, E. N., & Zhang, T. (2021). The impact of wearable devices on employee wellness programs: A study of hotel industry workers. *International Journal of Hospitality*

- Management*, 93, 102769. <https://doi.org/10.1016/j.ijhm.2020.102769>
- Tseng, K. C., Hsu, C.-L., & Chuang, Y.-H. (2012). Acceptance of Information Technology and the Internet by People Aged Over Fifty in Taiwan. *Social Behavior and Personality: An International Journal*, 40(4), 613–622. <https://doi.org/10.2224/sbp.2012.40.4.613>
- Uhrich, S. (2021). Sport spectator adoption of technological innovations: a behavioral reasoning analysis of fan experience apps. *Sport Management Review*, 1–25. <https://doi.org/10.1080/14413523.2021.1935577>
- Underwood, R., Bond, E., & Baer, R. (2001). Building service brands via social identity: Lessons from the marketplace. *Journal of Marketing Theory and Practice*, 9(1), 1–13.
- Van der Heijden, H. (2004). User Acceptance of Hedonic Information Systems. *MIS Quarterly*, 28(4), 695–704. <https://doi.org/10.2307/25148660>
- van Oorschot, J. A. W. H., Hofman, E., & Halman, J. I. M. (2018). A bibliometric review of the innovation adoption literature. *Technological Forecasting and Social Change*, 134, 1–21. <https://doi.org/10.1016/j.techfore.2018.04.032>
- Venkatesh, V., & Bala, H. (2008). Technology Acceptance Model 3 and a Research Agenda on Interventions. *Decision Sciences*, 39(2), 273–315. <https://doi.org/10.1111/j.1540-5915.2008.00192>
- Venkatesh, V., & Davis, F. D. (2000). A Theoretical Extension of the Technology Acceptance Model: Four Longitudinal Field Studies. *Management Science*, 46(2), 186–204. <https://doi.org/10.1287/mnsc.46.2.186.11926>
- Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User Acceptance of Information Technology: toward a Unified View. *MIS Quarterly*, 27(3), 425–478.



<https://doi.org/10.2307/30036540>

- Venkatesh, V., Thong, J. Y. L., & Xu, X. (2012). Consumer Acceptance and Use of Information Technology: Extending the Unified Theory of Acceptance and Use of Technology. *MIS Quarterly*, 36(1), 157–178.
- Venkatesh, V., Thong, J., & Xu, X. (2016). Unified Theory of Acceptance and Use of Technology: A Synthesis and the Road Ahead. *Journal of the Association for Information Systems*, 17(5), 328–376. <https://doi.org/10.17705/1jais.00428>
- Neuman, L., & Robson, K. (2018). *Basics of social research: qualitative and quantitative approaches*. Pearson Canada Inc.
- Wang, X., Yuen, K. F., Wong, Y. D., & Teo, C. C. (2018). An innovation diffusion perspective of e-consumers' initial adoption of self-collection service via automated parcel station. *The International Journal of Logistics Management*, 29(1), 237-260.
- Wani, T. A., & Ali, S. W. (2015). Innovation diffusion theory. *Journal of General Management Research*, 3(2), 101-118.
- Wilkinson, F. (2022, June 2). *Industrial Revolution and Technology*. National Geographic. <https://education.nationalgeographic.org/resource/industrial-revolution-and-technology/>
- Williams, P., & Soutar, G. N. (2009). Value, satisfaction and behavioral intentions in an adventure tourism context. *Annals of Tourism Research*, 36(3), 413–438.
- Wolfe, R. A. (1994). Organizational innovation: Review, critique, and suggested research directions. *Journal of Management Studies*, 31(3), 405–431. <https://doi.org/10.1111/j.1467-6486.1994.tb00624>.

- Wu, J. H., & Wang, S. C. (2005). What drives mobile commerce? An empirical evaluation of the revised technology acceptance model. *Information & Management*, 42(5), 719–729
- Yan, G., Watanabe, N. M., Shapiro, S. L., Naraine, M. L., & Hull, K. (2019). Unfolding the Twitter scene of the 2017 UEFA Champions League Final: Social media networks and power dynamics. *European Sport Management Quarterly*, 19(4), 419-436.
- Yuen, K. F., Cai, L., Qi, G., & Wang, X. (2021). Factors influencing autonomous vehicle adoption: An application of the technology acceptance model and innovation diffusion theory. *Technology Analysis & Strategic Management*, 33(5), 505-519.
- Yuen, K. F., Wang, X., Ng, L. T. W., & Wong, Y. D. (2018). An investigation of customers' intention to use self-collection services for last-mile delivery. *Transport Policy*, 66, 1-8.
- Zeithaml, V. (1988). Consumer perceptions of price, quality, and value: A means-end model and synthesis of evidence. *Journal of Marketing*, 52, 2–22
- Zhang, N., Guo, X., & Chen, G. (2008). IDT-TAM integrated model for IT adoption. *Tsinghua Science & Technology*, 13(3), 306–31

## Appendices

## **Appendix A**

### **Information Letter**

My name is Vinu Selvaratnam and I am completing my doctoral dissertation under the supervision of Dr. Ryan Snelgrove in the Department of Recreation and Leisure Studies at the University of Waterloo in Canada. As part of my PhD dissertation, I am conducting a research study that focuses on why and how consumers adopt technological innovation. The results of this dissertation will help inform professional sport organizations and teams to develop strategies and get more fans to adopt new technological innovations. The results will also advance theory as it can help researchers reveal the uniqueness of sport and why it differs in understanding technological innovation adoption.

If you volunteer as a participant in this study, you will be asked to complete a brief questionnaire. Please keep in mind that completing this questionnaire takes approximately 10 minutes. For some of the questions, it asks: “we are interested in your perceptions and beliefs about using the Apple Vision Pro. On a scale of 1 (strongly disagree) to 7 (strongly agree), indicate whether you agree or disagree with the following statement: The Apple Vision Pro would be easy to use.” You will also be asked for some demographic information such as age, gender, ethnicity, and more. Please know that you may decline to answer any questions you do not wish to answer and you may stop participating in the questionnaire at any time. If you begin the questionnaire and choose to end your participation early, please click through to the end of the questionnaire in order to receive your remuneration. In appreciation of your time, you will receive \$2. Your participation in the study will be kept confidential and no identifying information will be used in any paper or publication resulting from this study.

You will be completing the study by an online survey operated by Qualtrics. Qualtrics has implemented technical, administrative, and physical safeguards to protect the information provided via the Services from loss, misuse, and unauthorized access, disclosure, alteration, or

destruction. However, no Internet transmission is ever fully secure or error free. Qualtrics temporarily collects your computer IP address to avoid duplicate responses in the dataset but will not collect information that could identify you personally.

Collected data will be securely stored on a password protected computer and University of Waterloo server for at least 7 years. There are no known or anticipated risks associated with participation in this study. This questionnaire will not ask for your name or other identifying information, though your responses will be linked to your Prolific ID. Once the data is collected, Prolific IDs will be removed and permanently erased. It will not be possible to withdraw your data once you submit your responses because the researchers will have no way of identifying which responses are yours.

You are under no obligation to participate in this study. By providing your consent, you are not waiving your legal rights or releasing the investigator(s) or involved institution(s) from their legal and professional responsibilities. If you have any questions about this study or want additional information, please contact Dr. Ryan Snelgrove at +1-519-888-4567, ext. 43723. You can also email Dr. Ryan Snelgrove at [ryan.snelgrove@uwaterloo.ca](mailto:ryan.snelgrove@uwaterloo.ca). This study has been reviewed and received ethics clearance through a University of Waterloo Research Ethics Board (REB#45133). If you have questions for the Board, contact the Office of Research Ethics, toll-free at 1-833-643-2379 (Canada and USA), 1-519-888-4440, or [reb@uwaterloo.ca](mailto:reb@uwaterloo.ca)

- I consent
- I do not consent

## Appendix B

### Questionnaire

---

Start of Block: Bot attention check

Q25 What is the third word in this question: How many stars are in the American Flag?

- Image:13 (1)
- Image:Stars (2)
- Image:American flag (3)
- Image:77 (4)

---

Start of Block: Prolific ID

ID What is your Prolific ID?

---

End of Block: Prolific ID

---

Start of Block: Vision Pro Video

VID

Please watch the video before proceeding.

End of Block: Vision Pro Video

---

Start of Block: Description of the Apple Vision Pro

DESC Please read the following description of the Apple Vision Pro before proceeding.

Description of the Apple Vision Pro Mixed Reality Headset:

- blends digital content with your physical space
- you navigate by using your eyes, hands, and voice
- available to purchase in February 2024 in the U.S. at a cost of roughly \$3,500
- it can transform any room into your own personal theater and expand your favorite sport games to the perfect size while feeling like you're part of the action with spatial audio
- there is discussion that one day sport fans can use the Apple Vision Pro to watch sports in a setting of their liking

---

Page Break

---

KNOW Do you have prior knowledge of the Apple Vision Pro?

- Yes (1)
  - No (2)
-

DESC Was the description and video provided about the Apple Vision Pro helpful?

Yes (1)

No (2)

---

CHECK Did the video shown mention anything about hockey?

Yes (1)

No (2)

---

SFAN Do you consider yourself a sports fan?

Yes (1)

No (4)

---

TECH Do you consider yourself technologically savvy?

Yes (1)

No (2)

---



PRICE What is the price you're willing to pay for the Apple Vision Pro?

- \$1000-\$1500 (1)
- \$1501-\$2000 (2)
- \$2001-\$2500 (3)
- \$2501-\$3000 (4)
- Retail price of \$3500 (5)
- None of the above (6)

End of Block: Description of the Apple Vision Pro

---

Start of Block: TAM

PEU In this section of the questionnaire, we are interested in your perceptions about using The Apple Vision Pro.

	Strongly disagree (1) (1)	(2) (2)	(3) (3)	(4) (4)	(5) (5)	(6) (6)	Strongly agree (7) (7)
The Apple Vision Pro can improve my experience of watching sports. (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Using the Apple Vision Pro can increase my chances of achieving things that are important to me as it relates to	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

watching  
sports.  
(18)

The Apple  
Vision Pro  
will be  
useful for  
watching  
sports.  
(19)

Watching  
multiple  
sports  
games  
with real-  
time  
scores and  
stats using  
the Apple  
Vision Pro  
can  
enhance  
my  
knowledge  
of sports.  
(20)



	Strongly disagree (1) (1)	(2) (2)	(3) (3)	(4) (4)	(5) (5)	(6) (6)	Strongly agree (7) (7)
The Apple Vision Pro will be easy to use. (21)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Learning to operate the the Apple Vision Pro will be easy. (22)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Using the Apple Vision Pro will be clear and understandable. (23)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It will be easy to interact with the Apple Vision Pro (24)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

PUR -

	Strongly disagree (1) (1)	(2) (2)	(3) (3)	(4) (4)	(5) (5)	(6) (6)	Strongly agree (7) (7)
There is a high likelihood that I will purchase the Apple Vision Pro in the foreseeable future. (25)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I intend to purchase the Apple Vision Pro within the foreseeable future. (26)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I will purchase the Apple Vision Pro within the	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

foreseeable  
future. (27)

Purchasing  
the Apple  
Vision Pro  
in the

foreseeable  
future is  
important  
to me. (28)



---

Page Break

ATD My impression of purchasing the Apple Vision Pro is:

	1 (1)	2 (2)	4 (4)	5 (5)	6 (6)	7 (7)	8 (8)	
Bad	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Good
Negative	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Positive
Unsatisfactory	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Satisfactory
Unfavorable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Favorable
Unpleasant	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Pleasant

End of Block: TAM

Start of Block: IDT

TRI In this section of the questionnaire, we are interested in collecting data on your beliefs about using the Apple Vision Pro.

	Strongly disagree (1) (1)	(2) (2)	(3) (3)	(4) (4)	(5) (5)	(6) (6)	Strongly agree (7) (7)
Before I decide to use the Apple Vision Pro mixed reality headset, I would like to view a demonstration of using it. (95)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Before I decide to use the Apple Vision Pro mixed reality headset, I would like to see how it works. (96)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Before I decide to use	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



the Apple  
Vision Pro  
mixed reality  
headset, I  
would like to  
try it. (113)

---

Page Break

COM -

	Strongly disagree (1) (1)	(2) (2)	(3) (3)	(4) (4)	(5) (5)	(6) (6)	Strongly agree (7) (7)
The Apple Vision Pro would be compatible with my needs in terms of watching sports. (97)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The Apple Vision Pro would be compatible with my wants in terms of watching sports. (98)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The Apple Vision Pro would be compatible	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

with my  
expectations  
in terms of  
watching  
sports. (99)

---

Page Break

---

ADV -

	Strongly disagree (1) (1)	(2) (2)	(3) (3)	(4) (4)	(5) (5)	(6) (6)	Strongly agree (7) (7)
Compared to watching a professional sport game on TV the traditional way, using the Apple Vision Pro would improve the quality of my fan experience. (100)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Compared to watching a professional sport game on TV the traditional	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

way, using  
the Apple  
Vision Pro  
would give  
me greater  
control over  
my fan  
experience.

(101)

Compared  
to watching  
a  
professional  
sport game  
on TV the  
traditional  
way, using  
the Apple  
Vision Pro  
would  
make my  
fan  
experience  
more  
convenient.

(102)

Compared



to watching  
a  
professional  
sport game  
on TV the  
traditional  
way, using  
the Apple  
Vision Pro  
would  
enhance my  
overall fan  
experience.

(103)

CPL -

	Strongly disagree (1) (1)	(2) (2)	(3) (3)	(4) (4)	(5) (5)	(6) (6)	Strongly agree (7) (7)
Using the Apple Vision Pro would require technical skills. (104)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Using the Apple Vision Pro would require me to be technologically savvy. (105)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Using the Apple Vision Pro would require technical understanding. (112)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

---

OBS -

	Strongly disagree (1) (1)	(2) (2)	(3) (3)	(4) (4)	(5) (5)	(6) (6)	Strongly agree (7) (7)
I can see the benefits of using the Apple Vision Pro immediately. (102)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

End of Block: IDT

---

Start of Block: Attention Check1



ATT1 Which of the following is NOT a professional sport team?

- New York Rangers (1)
- Toronto Raptors (2)
- New England Patriots (3)
- Cleveland Guardrails (4)
- None of the above (5)

PMV In this section of the questionnaire, we are interested in collecting data about your perceptions regarding the value of the Apple Vision Pro.

	Strongly disagree (1) (1)	(2) (2)	(3) (3)	(4) (4)	(5) (5)	(6) (6)	Strongly agree (7) (7)
The Apple Vision Pro is reasonably priced at \$3,500 (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The Apple Vision Pro will offer value for money (77)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The Apple Vision Pro	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

will be  
good for  
the price  
(78)

The Apple  
Vision Pro  
can be  
economical  
(79)



---

Page Break

PFR -

	Strongly disagree (1) (1)	(2) (2)	(3) (3)	(4) (4)	(5) (5)	(6) (6)	Strongly agree (7) (7)
I will waste my money by purchasing the Apple Vision Pro (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The financial investment I will make for the Apple Vision Pro will not be a wise decision (77)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I will not get my money's worth from	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

purchasing  
the Apple  
Vision Pro  
(78)

I worry that  
purchasing  
the Apple  
Vision Pro  
will involve  
unexpected  
extra  
expenses.  
(79)



---

End of Block: Perceived Value and Risk

---

Start of Block: Team Identification and Fan Identification

---

Page Break

PRE In this section of the questionnaire, we are interested in collecting data on your sport fandom.

	Strongly disagree (1) (1)	(2) (2)	(3) (3)	(4) (4)	(5) (5)	(6) (6)	Strongly agree (7) (7)
I feel good about being a fan of my professional sport team. (24)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
In general, I am glad to be a fan of my professional sport team. (25)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am proud to think of myself as a fan of my professional sport team. (26)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

PUE -

	Strongly disagree (1) (1)	(2) (2)	(3) (3)	(4) (4)	(5) (5)	(6) (6)	Strongly agree (7) (7)
Overall, my professional sport team is viewed positively by others. (29)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
In general, others respect my professional sport team. (30)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Overall, people hold a favourable opinion about my professional sport team. (31)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

SOI -

	Strongly disagree (1) (1)	(2) (2)	(3) (3)	(4) (4)	(5) (5)	(6) (6)	Strongly agree (7) (7)
What happens to my professional sport team will influence what happens in my life. (30)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Changes affecting my professional sport team will have an impact on my own life. (31)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
What happens to my	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

professional  
sport team  
will have an  
impact on  
my own  
life. (32)

---

Page Break



IOS -

	Strongly disagree (1) (1)	(2) (2)	(3) (3)	(4) (4)	(5) (5)	(6) (6)	Strongly agree (7) (7)
When someone criticizes my professional sport team it feels like a personal insult. (24)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
In general, being associated with my professional sport team is an important part of my self-image. (25)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When someone compliments	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

my  
professional  
sport team,  
it feels like a  
personal  
compliment.  
(26)

---

Page Break

---

BI -

	Strongly disagree (1) (1)	(2) (2)	(3) (3)	(4) (4)	(5) (5)	(6) (6)	Strongly agree (7) (7)
I participate in activities supporting my professional sport team. (24)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am actively involved in activities that relate to my professional sport team. (25)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I participate in activities with other (fans/members) of my professional sport team. (26)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

CGA -

	Strongly disagree (1) (1)	(2) (2)	(3) (3)	(4) (4)	(5) (5)	(6) (6)	Strongly agree (7) (7)
I am aware of the tradition and history of my professional sport team. (24)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I know the ins and outs of my professional sport team. (25)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have knowledge of the successes and failures of my professional sport team.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

(26)

Fan Identification In this section of the questionnaire, we are interested in collecting data on your sport fandom.

	Strongly disagree (1) (1)	(2) (2)	(3) (3)	(4) (4)	(5) (5)	(6) (6)	Strongly agree (7) (7)
When someone criticizes my favorite professional sport team, it feels like a personal insult to me. (24)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am very interested in what others think about my favorite professional sport team. (25)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My favorite professional	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

sport team's  
successes are  
my  
successes.

(26)

When  
someone  
praises my  
favorite  
professional  
sport team, it  
feels like a  
personal  
compliment.

(27)

If a story in  
the media  
criticized my  
favorite  
professional  
sport team, I  
would feel  
embarrassed.

(28)

I consider  
myself a big  
fan my



favorite  
professional  
sport team.  
(29)

---

Page Break

---

PCM In which of the following categories would you classify yourself as a/an [TEAM NAME] fan?

- An individual who has formed a psychological connection to a sport with the notion of awareness, recognizing that a sport team exists. (1)
- An individual who has gained the knowledge of a sport team and has formed a preference for a particular sport team over another. (2)
- An individual who has formed a stable and enduring psychological connection with a sport team. (3)
- An individual who has formed a solid psychological connection in reaching a level to become a committed fan of a sport team. (4)
- None of the above (5)

Q102 Which of the following is not a fruit?

- Apple (1)
- Orange (2)
- Basketball (3)
- Blueberry (4)

End of Block: Attention Check Question 2

---

Start of Block: TAM2



PEU2 In this section of the questionnaire, we are interested in your beliefs about using the Apple Vision Pro.

	Strongly disagree (1) (1)	(2) (2)	(3) (3)	(4) (4)	(5) (5)	(6) (6)	Strongly agree (7) (7)
Using the Apple Vision Pro will be useful in terms of adding value to watching sports. (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The Apple Vision Pro will be useful for watching sports. (18)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Using the Apple Vision Pro will be useful in terms of	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

meeting  
my needs  
and wants  
while  
watching  
sports.  
(39)

End of Block: TAM2

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Start of Block: Demographic

Page Break

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DEMS In this section of the questionnaire, we are interested in collecting data on your demographic profile.

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GEN What is your gender?

- Man/Transman (1)
  - Woman/Transwoman (2)
  - Genderqueer/Gender non-conforming/ Gender non-binary/ Gender fluid (3)
  - Two-spirited (4)
  - I prefer to self-define (5)
  - I prefer not to answer (6)
- 

MAR What is your marital status?

- Single (1)
  - Married (2)
  - Divorced (3)
  - Widowed (4)
  - Other (5)
-

EDU What is your level of education?

- Graduated from high school (1)
  - Currently attending community college (3)
  - Graduated from community college (4)
  - Currently attending university (5)
  - Graduated from university (6)
  - Currently attending graduate/professional studies (7)
  - Graduated from graduate/professional studies (8)
- 

ETH What is your ethnicity?

- Black/African American (1)
  - Native American (2)
  - Hispanic (3)
  - Asian (4)
  - White (5)
  - Other (6)
-

INC What is your annual income before taxes?

- No income (1)
- Below \$30,000 (2)
- 30,001 – 50,000 (3)
- 50,001 – 70,000 (4)
- 70,001 – 90,000 (5)
- 90,001 – 110,000 (6)
- 110,001+ (7)

End of Block: Demographic

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Start of Block: Code

CODE Copy and paste this code:

CKQMEQH7

End of Block: Code

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## Appendix C

### List of Measures

Construct / Factor	ID	Measurement items	Adapted source
<b>Technology Acceptance Model</b>			Davis et al. (1992) Gefen et al. (2003)
1. Perceived usefulness	PEU1	From 1= <i>strongly disagree</i> to 7= <i>strongly agree</i>  The Apple Vision Pro can improve my experience of watching sports.	
	PEU2	Using the Apple Vision Pro can increase my chances of achieving things that are important to me as it relates to watching sports.	
	PEU3	The Apple Vision Pro will be useful for watching sports.	
	PEU4	Watching multiple sports games with real-time scores and stats using the Apple Vision Pro can enhance my knowledge of sports.	
	PEU5	Using the Apple Vision Pro would be useful in terms of adding value to watching sports.	

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	PEU6	Using the Apple Vision Pro will be useful in terms of meeting my needs and wants while watching sports.	
2. Perceived ease of use	PEOU1	From 1= <i>strongly disagree</i> to 7= <i>strongly agree</i>  The Apple Vision Pro will be easy to use.	Davis et al. (1992) Gefen et al. (2003)
	PEOU2	Learning to operate the Apple Vision Pro will be easy.	
	PEOU3	Using the Apple Vision Pro will be clear and understandable.	
	PEOU4	It will be easy to interact with the Apple Vision Pro.	
3. Purchase Intention	PUR1	From 1= <i>strongly disagree</i> to 7= <i>strongly agree</i>  There is a high likelihood that I will purchase the Apple Vision Pro in the foreseeable future.	Dodds et al. (1991)
	PUR2	I intend to purchase the Apple Vision Pro within the foreseeable future.	
	PUR3	I will purchase the Apple Vision Pro	

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		within the foreseeable future.	
	PUR4	Purchasing the Apple Vision Pro in the foreseeable future is important to me.	
4. Attitude toward using purchasing	ATD1	My impression of purchasing the Apple Vision Pro is:	Davis (1989) Fishbein & Ajzen (1975)
		Bad-good	
	ATD2	Positive-negative	
	ATD3	Satisfactory-unsatisfactory	
	ATD4	Favourable-unfavourable	
	ATD 5	Unpleasant-pleasant	
<b>Innovation Diffusion Theory</b>			
1. Trialability	TRI1	From 1= <i>strongly disagree</i> to 7= <i>strongly agree</i>	Yuen et al. (2018)
		Before I decide to use the Apple Vision Pro, I would like to view a demonstration of using it.	
	TRI2	Before I decide to use the Apple Vision Pro, I would like to get an idea of how it works	
	TRI3	Before I decide to use the Apple Vision Pro, I would like to try it.	



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2. Compatibility	COM1	From 1= <i>strongly disagree</i> to 7= <i>strongly agree</i>	Yuen et al. (2020)
		The Apple Vision Pro would be compatible with my needs in terms of watching sports.	
	COM2	The Apple Vision Pro would be compatible with my wants in terms of watching sports.	
	COM3	The Apple Vision Pro would be compatible with my expectations in terms of watching sports.	
3. Complexity	CPL1	From 1= <i>strongly disagree</i> to 7= <i>strongly agree</i>	Tan and Teo (2000)
		Using the Apple Vision Pro would require technical skills.	
	CPL2	Using the Apple Vision Pro would require me to be technologically savy.	
	CPL3	Using the Apple Vision Pro would require technical understanding.	
4. Observability	OBS1	From 1= <i>strongly disagree</i> to 7= <i>strongly agree</i>	Moore and Benbasat (1991) AlJabri and Sohail (2012)
		I can see the benefits of using the Apple	

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		Vision Pro immediately.	
<b>Perceived Monetary Value of Apple Vision Pro</b>	PMV1	The Apple Vision Pro is reasonably priced at \$3,500	Petrick (2004) Sweeney and Soutar (2001)
	PMV2	The Apple Vision Pro will offer value for money	
	PMV3	The Apple Vision Pro will be good for the price	
	PMV4	The Apple Vision Pro can be economical	
<b>Perceived Financial Risk of Apple Vision Pro</b>	PFR1	I will waste my money by purchasing the Apple Vision Pro	Dowling & Staelin (1994)
	PFR2	The financial investment I will make for the Apple Vision Pro will not be a wise decision	
	PFR3	I will not get my money's worth from purchasing the Apple Vision Pro	
<b>Team Identification</b>			Heere & James (2007)
(The following constructs comprise of Team Identification)			Heere et al. (2011)
1. Private Evaluation	PRE1	From 1= <i>strongly disagree</i> to 7= <i>strongly agree</i>  I feel good about being a fan of my professional sport	Luhtanen and Crocker (1992)

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		team.	
	PRE2	In general, I am glad to be a fan of my professional sport team	
	PRE3	I am proud to think of myself as a fan of my professional sport team	
2. Public Evaluation	PUE1	From 1= <i>strongly disagree</i> to 7= <i>strongly agree</i>	Luhtanen and Crocker (1992)
		Overall, my professional sport team is viewed positively by others.	
	PUE2	In general, others respect my professional sport team	
	PUE3	Overall, people hold a favourable opinion about my professional sport team	
3. Sense of interdependence with the Group	SOI1	From 1= <i>strongly disagree</i> to 7= <i>strongly agree</i>	Gurin and Townsend (1986)
		What happens to my professional sport team will influence what happens in my life.	
	SOI2	Changes affecting my professional sport team will have an impact on my own	

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		life.	
	SOI3	What happens to my professional sport team will have an impact on my own life.	
4. Interconnection of Self with the Group	IOS1	When someone criticizes my professional sport team it feels like a personal insult.	Mael and Tetrick (1992)
	IOS2	In general, being associated with my professional sport team is an important part of my self-image.	
	IOS3	When someone compliments my professional sport team, it feels like a personal compliment.	
5. Behavioral Involvement	BI1	I participate in activities supporting my professional sport team.	Phinney (1992)
	BI2	I am actively involved in activities that relate to my professional sport team.	
	BI3	I participate in activities with other (fans/members) of my professional sport team.	
6. Cognitive Awareness	CGA1	I am aware of the tradition and history	Heere et al. (2011)

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of my professional sport team.

CGA2 I know the ins and outs of my professional sport team.

CGA3 I have knowledge of the successes and failures of my professional sport team.

### Demographics

1. Gender

GEN What is your gender?  
1 = Man/Transman  
2 = Woman/Transwoman  
3 = Genderqueer / Gender non-conforming / Gender non-binary / Gender Fluid  
4 = Two-spirited  
5= I prefer to self-define  
6= I prefer not to answer

2. Age

AGE What is your age?  
1 = 18-24  
2 = 25-34  
3 = 35-44  
4 = 45-54  
5 = 55+

3. Marital Status

MAR What is your marital status?  
1 = Single  
2 = Married  
3 = Divorced  
4 = Widowed

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		5 = Other
4. Education	EDU	What is your level of education?  1 = Graduated from high school 2 = Currently attending community college 3 = Graduated from community college 4 = Currently attending university 5 = Graduated from university 6 = Currently attending graduate/professional studies 7 = Graduated from graduate/professional studies 8 = Other
5. Ethnicity	ETH	1 = Black/African American 2 = Native American 3 = Hispanic 4 = Asian 5 = White 6 = Other
6. Income	INC	1 = No income 2 = Below \$30,000 3 = 30,001 – 50,000 4 = 50,001 – 70,000 5 = 70,001 – 90,000 6 = 90,001 – 110,000 7 = 110,001+

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