Tourists' Intent to Adopt Virtual Reality from a Consumer Value Perspective: A Comparison of Ankara, Moscow, and Baku

Prof. Dr. ALPER Ateş, Department of tourism, Selcuk Universty, Konya, Turkey

Dr. HASANLİ Nargiz, Department of business tourism, Azerbaijan Tourism and Management University, Baku, Azerbaijan.

Abstract

This study examines tourists' intention to adopt virtual reality (VR) technology from a consumer value perspective. Based on survey data collected from 1233 participants in Ankara, Moscow, and Baku in 2023, the study evaluates the effects of perceived benefits (enjoyment, usefulness, and immersiveness), perceived sacrifices (cost, physical risk, and complexity), and the resulting perceived value on behavioral intention. Findings indicate that higher perceived value strengthens tourists' intention to use VR, whereas high cost and risk perceptions reduce perceived value and adoption intent. Conversely, positive perceptions of enjoyment, utility, and immersiveness enhance adoption intentions. By comparing results across three national capitals, the study highlights the role of demographic and cultural differences in shaping attitudes toward VR technology.

Keywords: Behavioral intention; consumer value; tourism; perceived benefit; perceived sacrifice; virtual reality.

INTRODUCTION

The development of digital technologies such as the internet and social media platforms, multimedia, games and gamification, digital archives, panoramic images, simulations, interactive designs, robots, three-dimensional advanced visualization tools, virtual reality, and augmented reality (Sunar & Ateş, 2025), have led to the emergence of similar innovative applications, particularly in the tourism sector, which enrich visitor experiences, facilitate access to and sharing of information, and help individuals gain prior experience about a destination (Ateş et al., 2020). One such innovative development, virtual reality (VR) technology, has been seen as having great potential in destination promotion and experience delivery, especially in recent years (Buhalis & Law, 2008; Guttentag, 2010). VR provides interactive access to computer-based three-dimensional environments, allowing users to experience places as if they were real, even when they are not physically present there. The adoption of VR in tourism enables consumers to explore destinations before traveling, experience cultural and historical sites in a virtual environment, and shape their travel decisions accordingly (Tussyadiah et al., 2018). However, user adoption of VR technologies depends on a combination of perceptual, emotional, and practical factors (Kim et al., 2007).

The conceptual framework underlying the research topic is the consumer value perspective. This perspective involves comparing the benefits obtained from a product or service with the costs incurred to achieve these benefits (Kim et al., 2007). Tourists using SG technologies also decide on their adoption intentions by comparing the perceived benefits of the experience, such as entertainment, learning, and discovery; the perceived sacrifices, such as device cost, difficulty of use, physical risk, or discomfort; and the perceived value that is the net result of these elements.

The tourism literature has limited studies examining SG applications in terms of consumer value, despite the sector's rapid developments. This article analyzes tourists' intentions to adopt SG, perceived benefits, and perceived trade-offs based on the findings of a survey conducted in 2023 with 1,233 participants in Ankara, Moscow, and Baku. The role of participants' demographic variables and nationalities in determining these intentions was examined, and the statistical significance of cross-country differences was evaluated. The study aims to identify factors that could be effective in the widespread adoption of SG practices in the tourism sector and to contribute to the integration of SG into destination marketing and tourist experiences.

The following sub-objectives summarize the scope of the study:

- To reveal the contribution of SG applications in the tourism sector to the literature and to determine tourists' behavioral intentions towards SG applications and their perceived value.
- To analyze statistical differences by conducting an international comparison between Ankara, Moscow, and Baku.
- To evaluate the relationship between participants' demographic characteristics and their perceptions of SG applications.
- To examine the differences between perceived benefits and sacrifices according to nationality and the SG values to be adopted.

This research aims to contribute to the development of strategies for the adoption of SG in tourism destinations and to evaluate the potential of SG technology to enrich tourism experiences. As a result of the literature review and data analysis, SG will be one of the main innovations shaping the future of the tourism sector.

2. CONCEPTUAL FRAMEWORK

2.1. Definition and Historical Development of Virtual Reality

Virtual reality is defined as "an environment consisting of interactive computer simulations that give the user a sense of presence" through the integration of human-machine interaction with different technologies (Sherman & Craig, 2019). According to the literature, the term "VR" was popularized in the 1980s by Jaron Lanier and has also been referred to in various disciplines as "virtual environment," "artificial reality," or "cyberspace" (Craig et al., 2009). The development of VR can be examined in three main periods:

- *19th-century three-dimensional works:* The works of science fiction writers William Gibson and Ray Bradbury laid the foundations for the concept of virtual reality; the relationship between the virtual world and reality was discussed theoretically for the first time.
- *20th-century developments:* Devices such as Edward Link's flight simulator developed in 1929, Morton Heilig's Sensorama, and the Telesphere Mask are considered practical applications of VR. The term "virtual reality" officially entered use in 1989.
- *Commercialization in the 21st century:* Starting in the 2000s, companies began developing VR devices; products such as Oculus Rift, HTC Vive, and Sony PlayStation VR were introduced to the general consumer market. The table below summarizes key developments between 2013 and 2023 (Burdea & Coiffet, 2003).

Table 1. Virtual Reality Applications

Year	Virtual Reality Applications
2013	Valve developed a platform for storing VR content
2014	Valve introduced the SteamSight prototype; Facebook acquired Oculus VR; Sony announced the PlayStation VR project
2015	The Gloveone project achieved success on Kickstarter; HTC Vive and its controllers were unveiled
2016	At least 230 companies focused on developing VR technology
2017	Sony obtained a patent for wireless VR technology
2018	Lenovo Mirage Solo was launched (standalone Daydream VR headset)

2019	Oculus Quest is now available; it works without needing a PC or phone
2020	VR gloves, 8K VR headphones, VR motion chairs, and versatile treadmills were introduced
2021	Oculus Quest 2, HTC Vive Cosmos, and Valve Index became the best-selling devices
2022	Applications like Google Earth VR, GoPro, Sites in VR, and Titans of Space gained prominence
2023	Games like Beat Saber, Job Simulator, and Superhot VR became popular

Source: (Güleç, 2019; Dilwala, 2023).

2.2.Features of Virtual Reality

The quality of VR systems is defined by three main characteristics referred to in the literature as the **"3 I's"**: immersion, interaction, and imagination (Sherman & Craig, 2019).

- **Immersion:** This refers to the user's physical or mental "immersion" in the virtual world. *Physical immersion* allows the user to be abstracted from the real world by providing sensory stimuli through head-mounted displays or data suits. *Mental immersion*, on the other hand, refers to the user's deep engagement, focus, and empathy within the virtual world.
- **Interaction:** Real-time interaction between the user and the environment is critical for a realistic VR experience. Physical interaction enables actions such as holding or rotating objects; sensory feedback allows the user to adapt more fully to the virtual world through three-dimensional images, sounds, and tactile feedback.
- **Imagination/Presence:** It is important for the user to feel like they are part of the computer-generated world for VR to be successful. This feature is linked to the designer's idea of achieving specific goals, making VR an efficient tool for solving complex problems (Craig et al., 2009).

2.3. Application Areas of Virtual Reality and Tourism

SG first gained popularity in the three-dimensional video game and entertainment industries. However, over time, it has also become widespread in various sectors, including education, healthcare, architecture, industry, and the military (Guttentag, 2010). In education, virtual laboratories and historical reenactments enhance students' learning processes; in medicine, applications include surgical simulations and pain management; and in architecture, 3D design presentations are utilized (Tussyadiah et al., 2018).

In the tourism sector, SG's most important role is destination promotion and experience marketing. Using SG, potential tourists can explore destinations before physically traveling there, tour cultural and historical sites in a virtual environment, and make travel decisions based on these experiences. These applications are presented in various formats, including promotional videos, 360° tours, interactive museum visits, and virtual cultural festivals, thereby increasing the accessibility of destinations. Furthermore, during the pandemic and travel restrictions, SG has emerged as an alternative experience for individuals who are unable to travel (Durmaz et al., 2018).

2.4. Consumer Value Perspective and Research Model

The value-based adoption model (VAM) adopted in this study is used to explain tourists' intentions to adopt SG technology. The model consists of three main elements (Kim et al., 2007):

1. **Perceived Benefit:** Perceptions of the positive aspects of SG, such as providing entertainment, acquiring information, exploration, and interacting with the destination. These benefits were measured by the dimensions of "perceived enjoyment," "perceived usefulness," and "perceived excitement."
2. **Perceived Effort:** The efforts or inconveniences that must be endured to use SG technology. These are addressed in three sub-dimensions: device and software costs, potential physical risks (such as dizziness or eye strain), and perceived complexity during use.
3. **Perceived Value:** The net result of the benefits perceived by the tourist and the sacrifices made. When perceived value is high, the tourist's intention to adopt SG increases (Habibi et al., 2018).

The research model also includes two additional variables:

- **Behavioral Intention:** The tourist's level of planning to use SG in the near future. It is assumed that behavioral intention increases as perceived value increases (Hypothesis 3).
- **Sensation Seeking:** It is predicted that individuals with high novelty and sensation seeking will be more willing to try SG (Hypothesis 4).

This conceptual framework enabled the analysis of survey data on tourists' intentions to adopt SG in Ankara, Moscow, and Baku, and facilitated the assessment of perception differences across countries. The research results revealed that as perceived benefits (entertainment, usefulness, and attractiveness) increased, tourists' intention to adopt SG also increased. Conversely, as perceived sacrifices, such as cost, physical risk, and complexity, increased, perceived value decreased, and the intention to use SG declined.

METHOD

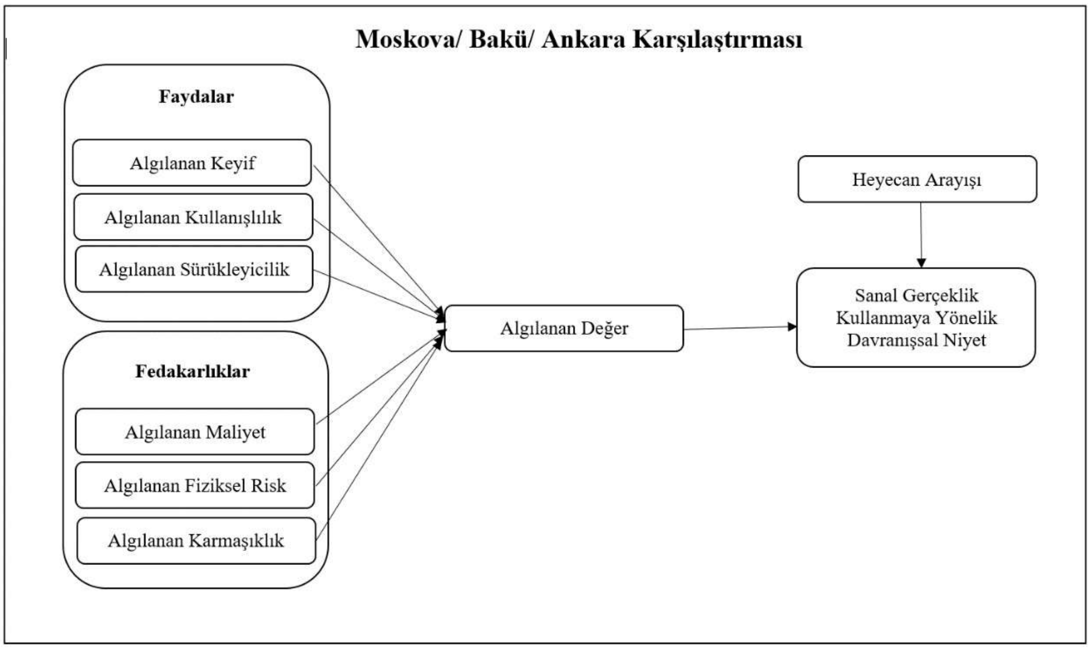
The study aims to measure tourists' intention to adopt virtual reality (based on perceived benefits, perceived sacrifices, and perceived value), determine its effect on behavioral intention, and conduct an international comparison (Ankara-Moscow-Baku). In line with this objective, the research area was determined as Moscow, the capital of Russia; Baku, the capital of Azerbaijan; and Ankara, the capital of Turkey. The sub-objectives of the study were to contribute to the literature on virtual reality applications in the tourism sector, to reveal tourists' behavioral intentions towards virtual reality applications and their perceived value, and to determine whether there is a statistically significant difference between participants' perceptions of the benefits, perceived sacrifices, perceived value, adoption intentions, and behavioral intentions of virtual reality applications used in the tourism sector according to their nationality.

The research was designed quantitatively and utilized survey techniques. In line with the research's purpose, the survey form was created using the scale developed by Vishwakarma, Mukherjee, and Datta (2020). As the research was conducted in Ankara, Moscow, and Baku, the survey form was prepared in Turkish, Russian, and Azerbaijani. The first section of the questionnaire form contained questions aimed at determining the demographic characteristics of the participants, such as gender, marital status, income level, education level, and age. In addition to the participants' demographic characteristics, there were questions about who they traveled with, how many times they traveled per year, their preferred type of tourism, and the operating systems of the phones they used. The second section of the survey form includes questions about perceived enjoyment (4 statements), perceived excitement (4 statements), perceived usefulness (3 statements), perceived cost (3 statements), perceived physical risk (3 statements), perceived complexity (3 statements), perceived value (3 statements), behavioral intention to use virtual reality (3 statements), and thrill seeking (4 statements). The response options for the statements in this section of the questionnaire were weighted from 1 to 5. These weights were rated as (1) Strongly Disagree, (2) Disagree, (3) Neither Agree Nor Disagree, (4) Agree, and (5) Strongly Agree. The questionnaire was administered face-to-face and online. Furthermore, as in the original scale, the questionnaire form included two items with reverse coding: one in the perceived enjoyment dimension and one in the perceived complexity dimension ( ). While administering the survey, considering the subject and purpose of the research, a question was added about whether participants used virtual reality. Those who answered "yes" were allowed to proceed with completing the survey. Ethical Committee Approval was obtained before administering the survey form.

A review of the literature reveals that virtual reality applications in the tourism sector have generally been examined theoretically, with a focus on the technologies used and the benefits they provide. Consequently, the limited literature on measuring tourists' intention to adopt virtual reality and making international comparisons, which is the main objective of this research, constitutes a significant limitation in terms of comparing the results obtained from this study. The broad scope of the survey form's application in Ankara, Moscow, and Baku, its implementation within a specific time frame, and the unknown representativeness of the sample population in Ankara, Moscow, and Baku also constitute limitations of the research.

Within the scope of the research objective, a symbolic model was created to measure tourists' intention to adopt virtual reality and to compare the results between Ankara, Moscow, and Baku.

Figure 3.1. Symbolic Model of the Research



The main and sub-hypotheses determined according to the symbolic model created within the scope of the research are as follows:

Hypothesis 1. The perceived benefits of virtual reality technology have a statistically significant effect on perceived value.

Hypothesis 2. Participants' perceived sacrifices regarding virtual reality technology have a statistically significant effect on perceived value.

Hypothesis 3. Participants' perceived value of virtual reality technology has a statistically significant effect on their behavioral intentions to use virtual reality.

Hypothesis 4. Participants' thrill-seeking has a statistically significant effect on their behavioral intentions to use virtual reality.

FINDINGS

According to the population sample calculation table developed by Yazıcıoğlu and Erdoğan (2004) and Cohen et al. (2000), since the research population is not fully known, the sample size is stated as 384 for a population size of 1,000,000 or more at a 95% confidence level. At least 384 survey forms were obtained in Ankara, Moscow, and Baku, and efforts were made to exceed this number. The survey form was prepared for both online and face-to-face administration. Since the survey form was administered in Ankara, Moscow, and Baku, a total of 1,233 survey forms were obtained. Of these survey forms, 409 were obtained from Moscow, 414 from Baku, and 410 from Ankara. In addition, given the impossibility of obtaining the population list, it was necessary to resort to convenience sampling, a non-random sampling technique (Ateş & Sunar, 2024b).

Table 1. Demographic Distribution of Participants

		Ankara	Moscow	Baku	Total
Gender	**Female**	197	221	213	631
	Male	213	188	201	602
Marital Status	**Married**	245	222	246	713
	Single	165	187	168	520
Age Range	**18-24**	78	135	107	320
	25-34 years old	120	108	131	359
	35-44 years old	116	90	97	303
	45-54 years old	78	56	59	193
	55 years and older	18	20	20	58
Education Level	**Elementary/High School**	15	17	12	44
	Associate Degree	88	109	108	305
	Bachelor's Degree	245	229	240	714
	Graduate	62	54	54	170
Vacation Status	**Alone**	16	34	61	111
	With my family	260	203	188	651
	With my friends	128	115	103	246
	Others	6	57	62	125
Travel Frequency Within a Year	**1**	150	156	164	470
	2	158	149	148	455
	3	50	52	50	152
	4 and above	52	52	52	156
Preferred Type of Tourism	**Coastal Tourism**	266	263	269	798
	Cultural Tourism	106	107	118	331
	Health Tourism	14	14	-	28
	Other	24	25	27	76

As seen at the Table 1, it can be interpreted that the participants' genders are generally balanced, that there are more single people in Moscow despite the vast majority being married, that the vast majority of participants are young and middle-aged individuals (25-44 years old), and that the vast majority of participants have a bachelor's degree level of education. Participants generally go on vacation with their families and usually travel 1-2 times a year. When examining the type of tourism preferred by participants, it is evident that they prefer coastal tourism the most.

Table 2. Distribution of Participants' Monthly Income Levels

	Monthly Income Level	Number	Percentage
Moscow	13,890 RUB and Below	121	29.6
	13,891 RUB–27,780 RUB	234	57.2
	27,781 RUB and above	54	13.2
Baku	300 AZN and Below	120	29
	301 AZN-600 AZN	240	58

	601 AZN and above	54	13
Ankara	6 471 TL and Below	240	58.5
	6,472 TL–12,942 TL	140	34.2
	12,943 TL and above	30	7.3

In Table 2, Cronbach's Alpha values were used to determine the reliability of the data set obtained from the survey form, and factor analysis was applied to test its validity. As a prerequisite for applying factor analysis, the Kaiser-Meyer-Olkin (KMO) and Bartlett's test values must be within appropriate ranges. Bartlett's sphericity test also indicates the consistency of the items (Pett, Lackey, & Sullivan, 2003, p. 77). A p-value of less than 0.05 for Bartlett's test indicates that the data set is suitable for factor analysis (Keser, Öngen Bilir, & Aytaç, 2017, p. 61). Furthermore, when performing factor analysis, it is assumed that an item must have a loading value of at least 0.450 (Ateş & Sunar, 2024) and a commonality value of at least 0.50 (Hair et al., 2017). The reliability of the scales was calculated using Cronbach's Alpha with a 5% margin of error. According to Arıkan (2011), a Cronbach's Alpha value greater than 0.80 indicates a highly reliable scale.

Table 3. Factor Analysis Results of the Perceived Benefits of Virtual Reality Use Scale

	Equivalent Origin	Factor Loadings	Eigenvalue	Variance	Mean	Alpha
AK			**3.883**	**35.269**	**3,787**	**0.983**
AK 1	0.959	0.892			3.799	
AK 2	0.947	0.911			3,764	
AK 3	0.942	0.866			3,830	
AK 4	0.970	0.901			3.756	
AS			**3.905**	**35,497**	**3,877**	**0.982**
AS 1	0.942	0.890			3.858	
AS 2	0.967	0.914			3,864	
AS 3	0.963	0.920			3.909	
AS 4	0.930	0.905			3,876	
AKUL			**2.728**	**24,798**	**3,856**	**0.979**
AKUL 1	0.937	0.845			3.847	
AKUL 2	0.979	0.839			3.857	
AKUL 3	0.980	0.820			3.863	
NOTE: Varimax rotated principal component analysis. KMO sample adequacy: 90.8%; Bartlett's sphericity test Chi-Square: 26645.501, df:55, p=0.000; n: 1233; Overall mean: 3.8390; SD:1.06; Alpha for the entire scale: 0.961; Total variance explained: 95.591% NOTE: AK: Perceived Enjoyment; AS: Perceived Attractiveness; AKUL: Perceived Usefulness						

As shown in Table 3, the participants' perceived benefits of virtual reality use scale, consisting of 11 items, underwent exploratory factor analysis, resulting in a minimum commonality of 0.930 and a minimum factor loading of 0.820. The three-dimensional scale explains 95.591% of the total variance. The KMO sample adequacy was found to be 90.8%, and the Bartlett Sphericity Test (χ^2=26645.501; df=55; p=0.000) value was also found to be significant. The overall mean of the scale was 3.83, and the standard deviation was 1.06.

Table 4. Factor Analysis Results of the Perceived Sacrifices Scale for Virtual Reality Use

	Equivalence	Factor Loadings	Eigenvalue	Variance	Mean	Alpha
AM			**2,831**	**31,460**	**3,946**	**0.946**
AM 1	0.935	0.868			3.990	
AM 2	0.857	0.895			3.880	
AM 3	0.947	0.876			3,968	
AFR			**2.976**	**33,071**	**3,818**	**0.976**
AFR 1	0.945	0.863			3.828	
AFR 2	0.953	0.869			3,807	
AFR 3	0.968	0.885			3,820	
AK			**2,718**	**30,202**	**3,931**	**0.987**
AK 1	0.972	0.834			3.929	
AK 2	0.982	0.840			3.925	
AK 3	0.967	0.823			3.939	

NOTE: Varimax rotated principal component analysis. KMO sample adequacy: 87.7%; Bartlett's sphericity test Chi-Square: 19208.220, df:36, p=0.000; n: 1233; Overall mean: 3.8987; SD:1.07; Alpha for the entire scale:
0.955; Total variance explained: 94.733% NOTE: AM: Perceived Cost; AFR: Perceived Physical Risk; AK: Perceived Complexity

Table 4 shows that participants' perceived sacrifices regarding virtual reality use were measured using a 9-item scale. As a result of the exploratory factor analysis, the lowest commonality was 0.857, and the lowest factor loading was 0.823. The scale, comprising three dimensions, accounts for 94.73% of the total variance. The KMO sample adequacy was 87.7%, and the Bartlett Sphericity Test (χ^2=19208.220; df=36; p=0.000) value was also found to be significant. The overall mean of the scale was 3.89, with a standard deviation of 1.07.

Table 5. Factor Analysis Results of the Perceived Value Scale for Virtual Reality Use

	Equivalent Origin	Factor Loadings	Eigenvalue	Variance	Mean	Alpha
AD			**2.902**	**96,741**	**3,959**	**0.983**
AD 1	0.962	0.981				
AD 2	0.980	0.990				
AD 3	0.961	0.980				

NOTE: Varimax rotated principal component analysis. KMO sample adequacy: 76.3%; Bartlett's sphericity test Chi-Square: 6301.416, df:3, p=0.000; n: 1233; Overall mean: 3.9592; SD: 1.23; Alpha for the entire scale: 0.983; Total variance explained: 96.741% AD: Perceived Value

In Table 5, Participants' perceived value of virtual reality use was measured using three items on a scale. Exploratory factor analysis revealed the lowest commonality was 0.961 and the lowest factor loading was 0.980. The single-dimensional scale explains 96.74% of the total variance in perceived value. The KMO sample adequacy was found to be 76.3%, and the Bartlett Sphericity Test (χ^2=6301.416; df=3; p=0.000) value was also found to be significant. The overall mean of the scale was 3.95, and the standard deviation was 1.23.

Table 6. Factor Analysis Results of the Thrill-Seeking Scale

	Equivalence	Factor Loadings	Eigenvalue	Variance	Mean	Alpha
Thrill Seeking			**3,171**	**79,281**	**3,528**	**0.912**
HA 1	0.695	0.834			3.852	
HA 2	0.889	0.943			3,541	
HA 3	0.726	0.852			3,253	
HA 4	0.861	0.928			3.468	

NOTE: Varimax rotated principal component analysis. KMO sample adequacy: 82.7%; Bartlett's sphericity test Chi-Square: 3748.447, df: 6, p=0.000; n: 1233; Mean: 3.528; SD: 1.06; Alpha: 0.912; Total variance explained:
79.281% HA: Thrill Seeking

As a result of the exploratory factor analysis conducted with the four items included in the thrill-seeking scale, the lowest commonality was 0.695, and the lowest factor loading was 0.834. The thrill-seeking scale, consisting of a single dimension, explains 79.28% of the total variance.

The KMO sample adequacy was found to be 82.7%, and the Bartlett Sphericity Test (χ^2=3748.447; df=6; p=0.000) value was also found to be significant. The overall mean of the scale was found to be 3.52, and the standard deviation was 1.06.

Table 7. Factor Analysis Results of the Behavioral Intentions Scale for Virtual Reality Use

	Common Origin	Factor Loadings	Eigenvalue	Variance	Mean	Alpha
DN			**2.931**	**97.688**	**3,964**	**0.988**
DN 1	0.966	0.983				
DN 2	0.989	0.994				
DN 3	0.976	0.988				

NOTE: Varimax rotated principal component analysis. Kaiser-Meyer-Olkin sample adequacy: 73.7%; Bartlett's sphericity test Chi-Square: 7412.960, df:3, p=0.000; n: 1233; Mean: 3.964; SD: 1.23; Alpha for the entire scale:
0.988; Total variance explained: 97.688% Note: Behavioral Intention

As shown in Table 7, participants' behavioral intention to use virtual reality was measured using three items on the scale. Exploratory factor analysis revealed the lowest commonality of 0.966 and the lowest factor loading of 0.983. The unidimensional scale explains 97.68% of the total variance in behavior. The KMO sample adequacy was found to be 73.7%, and the Bartlett Sphericity Test (χ^2=7412.960; df=3; p=0.000) value was also found to be significant. The overall mean of the scale was 3.96, and the standard deviation was 1.23.

The analyses revealed no validity or reliability issues with the scales. When examining the skewness and kurtosis values of the scales and dimensions in the questionnaire, these values were found to be between -1.5 and +1.5 in some studies (Tabachnick & Fidell, 2013; Özasma, 2020), and between -2 and +2 in others (George & Mallery, 2010), it is interpreted that the data set shows a normal distribution.

Regression analysis was used to test the hypotheses. To determine that there was no autocorrelation in the regression model, the Durbin-Watson statistics were found to have a value between 1.5 and 2.5 (Kalaycı, 2006). When examining multicollinearity among the independent variables in multiple regression analysis, the tolerance value should be at least 0.200; the VIF value should be at most 5 or 10; and the CI value should be at most 30 (Alpar, 2013).

Table 8. Results of the Regression Analysis Conducted on the Effects of the Benefits of Using Virtual Reality on Perceived Value

Model	Unstandardized Coefficients		Standardized Coefficients	t	Significance Level	Tolra e nc	VIF	CI
	B	Std. Error	Beta					
(Fixed)	0.484	0.064		7.577	0.000			1.000
Perceived Enjoyment	0.801	0.021	0.794	38,872	0.000	0.460	2.174	8,279
Perceived Persuasiveness	0.033	0.019	0.033	1.742	0.082	0.550	1.819	9,888
Perceived Usefulness	0.080	0.022	0.082	3.645	0.000	0.382	2.620	12,685
Dependent Variable: Perceived Value								
R: 0.874; R^2: 0.764; Adjusted R^2: 0.764; F for the model = 1329.089; p=0.000; D-W: 1.532								

When examining Table 8, the perceived benefits of using virtual reality affect the perceived value of using virtual reality (F=1329.089; p=0.000). Consequently, it has been determined that the regression models established for Hypothesis 1 are valid and can be used in estimation processes. The benefits of using virtual reality explain 76.4% of the perceived value of virtual reality technology. Based on this, Hypothesis 1 is accepted. When examining the sub-dimensions of the benefits of using virtual reality,

A one-unit increase in the perceived enjoyment dimension of virtual reality usage leads to a 0.794-unit increase in perceived value (B=0.794; p: 0.000); a one-unit increase in the perceived usefulness dimension leads to a 0.082-unit increase in perceived value (B=0.082; p: 0.000). The perceived immersiveness dimension of virtual reality use does not affect perceived value (p: 0.082).

Table 9. Results of the Regression Analysis on the Effects of the Benefits of Using Virtual Reality on Perceived Value Among Participants in Ankara

Model	Unstandardized Coefficients		Standardized Coefficients	t	Significance Level	Tolerance	VIF	CI
	B	Standard Error	Beta					
(Fixed)	0.624	0.123		5.069	0.000			1.000
Perceived Enjoyment	0.276	0.049	0.285	5.621	0.000	0.289	3,464	11,311
Perceived Persuasiveness	0.552	0.054	0.543	10.207	0.000	0.262	3,812	16,727
Perceived Usefulness	0.049	0.041	0.052	1.205	0.229	0.393	2.543	22,562
Dependent Variable: Perceived Value								
R: 0.836; R^2: 0.699; Adjusted R^2: 0.697; F for the model = 314.465; p=0.000; D-W: 1.065								

Table 9 shows that the perceived benefits of using virtual reality among participants in Ankara significantly affect the perceived value of using virtual reality ($F = 314.465$; $p < 0.000$). Consequently, it has been determined that the regression models established are valid and can be used in estimation processes. The perceived benefits of using virtual reality explain 69.7% of the perceived value of virtual reality technology.

A one-unit increase in the perceived enjoyment dimension of virtual reality use among participants in Ankara leads to a 0.285-unit increase in perceived value (B=0.285; p: 0.000); while a one-unit increase in the perceived immersiveness dimension leads to a 0.543-unit increase in perceived value (B=0.543; p=0.000). The perceived usefulness dimension of virtual reality use among participants in Ankara has no significant effect on perceived value ($p = 0.229$).

Table 10. Results of the Regression Analysis on the Effects of the Benefits of Virtual Reality Use on Perceived Value Among Participants in Moscow

Model	Unstandardized Coefficients		Standardized Coefficients	t	Significance Level	Tolerance	VIF	CI
	B	Std. Error	Beta					
(Fixed)	0.384	0.093		4.144	0.000			1.000
Perceived Enjoyment	0.911	0.030	0.880	30,210	0.000	0.468	2,137	5,320

Perceived Persuasiveness	-0.051	0.025	-0.050	-2.012	0.045	0.651	1.536	6.272
Perceived Usefulness	0.067	0.034	0.066	1.962	0.050	0.346	2,891	10,473
Dependent Variable: Perceived Value								
R: 0.916; R^2: 0.839; Adjusted R^2: 0.838; F for the model = 705.280; p=0.000; D-W: 1.904								

As shown in Table 10, the perceived benefits of using virtual reality among participants in Moscow significantly affect the perceived value of using virtual reality (F = 705.280; p < 0.000). Consequently, the regression models established for this situation are valid and can be used in estimation processes. The perceived benefits of using virtual reality explain 83.9% of the perceived value of virtual reality technology.

A one-unit increase in the perceived enjoyment dimension of virtual reality use among participants in Moscow leads to a 0.880-unit increase in perceived value (B = 0.880; p < 0.001), while an increase of one unit in the perceived immersiveness dimension leads to a decrease of 0.050 units in perceived value (B = 0.050; p = 0.045). The perceived usefulness dimension of virtual reality usage among participants in Moscow has no significant effect on perceived value (p = 0.050).

Table 11. Results of the Regression Analysis on the Effects of the Benefits of Virtual Reality Use on Perceived Value Among Participants in Baku

Model	**Unstandardized Coefficients**		**Standardized Coefficients**	**t**	**Significance Level**	**Tolerance**	**VIF**	**CI**
	B	**Std. Error**	**Beta**					
(Fixed)	0.631	0.119		5.302	0.000			1.000
Perceived Enjoyment	0.277	0.048	0.286	5.747	0.000	0.240	4.168	10,124
Perceived Persuasiveness	0.633	0.050	0.631	12.681	0.000	0.240	4,167	14,002
Perceived Usefulness	-0.035	0.035	-0.032	-0.988	0.324	0.554	1.804	21.980
Dependent Variable: Perceived Value								
R: 0.869; R^2: 0.756; Adjusted R^2: 0.754; F for the model = 423.368; p=0.000; D-W: 1.694								

When examining Table 11, it is evident that the perceived benefits of virtual reality usage among participants in Baku significantly influence the perceived value of virtual reality usage (F = 423.368; p < 0.000). Consequently, it has been established that the regression models developed in this situation are valid and can be used in estimation processes. The perceived benefits of using virtual reality explain 75.6% of the perceived value of virtual reality technology.

A one-unit increase in the perceived enjoyment dimension of virtual reality use among participants in Baku leads to a 0.286-unit increase in perceived value (B=0.286; p=0.000), while an increase of one unit in the perceived immersiveness dimension leads to an increase of 0.631 units in perceived value (B=0.631; p=0.000). The perceived usefulness dimension of virtual reality use among participants in Baku has no significant effect on perceived value (p = 0.324).

Table 12. Results of the Regression Analysis on the Effects of Sacrifices Related to the Use of Virtual Reality on Perceived Value

Model	Unstandardized Coefficients		Standardized Coefficients	t	Significance Level	Tolerance	VIF	CI
	B	Std. Error	Beta					
(Fixed)	5.939	0.028		212,916	0.000			1,000
Perceived Cost	-0.045	0.014	-0.041	-3.096	0.002	0.565	1.769	4.670
Perceived Physical Risk	-0.132	0.016	-0.132	-8.275	0.000	0.396	2.528	5.868
Perceived Complexity	-0.772	0.017	-0.803	-46.215	0.000	0.332	3.009	8.166
Dependent Variable: Perceived Value								
R: 0.936; R^2: 0.877; Adjusted R^2: 0.876; F for the model = 2914.088; p=0.000; D-W: 1.641								

In Table 12, perceived sacrifices related to the use of virtual reality affect the perceived value of virtual reality (F=2914.088; p=0.000). Consequently, it has been revealed that the regression models established for Hypothesis 2 are valid and can be used in estimation processes. The sacrifices associated with the use of virtual reality explain 87.6% of the perceived value of virtual reality technology. Consequently, Hypothesis 2 is accepted.

A one-unit increase in the perceived cost dimension of perceived sacrifices related to the use of virtual reality results in a 0.041-unit decrease in perceived value (B = -0.041; p = 0.002); a one-unit increase in the perceived physical risk dimension leads to a 0.132-unit decrease in perceived value (B = -0.132; p = 0.000); a one-unit increase in the perceived complexity dimension leads to a 0.803-unit decrease in perceived value (B = -0.803; p = 0.000).

Table 13. Results of the Regression Analysis on the Effects of Participants' Sacrifices Regarding the Use of Virtual Reality on Perceived Value in Ankara

Model	Unstandardized Coefficients		Standardized Coefficients	t	Significance Level	Tolerance	VIF	CI
	B	Std. Error	Beta					
(Fixed)	5.805	0.050		115,733	0.000			1,000
Perceived Cost	-0.253	0.039	-0.250	-6.526	0.000	0.351	2.848	5.022
Perceived Physical Risk	-0.006	0.025	-0.007	-0.240	0.811	0.666	1.502	5.831
Perceived Complexity	-0.609	0.033	-0.678	-18.627	0.000	0.388	2.575	8.877
Dependent Variable: Perceived Value								
R: 0.890; R^2: 0.791; Adjusted R^2: 0.790; F for the model = 513.314; p=0.000; D-W: 1.222								

As shown in Table 13, perceived sacrifices related to the use of virtual reality significantly affect the perceived value of virtual reality (F = 513.314; p < 0.000). Consequently, it has been revealed that the regression models established for this situation are valid and can be used in estimation processes. Sacrifices related to the use of virtual reality explain 79.1% of the perceived value of virtual reality technology.

A one-unit increase in the perceived cost dimension of virtual reality use among participants in Ankara results in a 0.250-unit decrease in perceived value (B = -0.250; p = 0.000); A one-unit increase in the perceived complexity dimension leads to a 0.678-unit decrease in perceived value (B = -0.678; p: 0.000). The perceived physical risk dimension of the perceived sacrifices associated with the use of virtual reality by participants in Ankara does not affect perceived value (p: 0.811).

Table 14. Results of the Regression Analysis on the Effects of Participants' Sacrifices Regarding the Use of Virtual Reality in Moscow on Perceived Value

Model	Unstandardized Coefficients		Standardized Coefficients	t	Significance Level	Tolerance	VIF	CI
	B	Std. Error	Beta					
(Fixed)	5.943	0.050		117,901	0.000			1,000
Perceived Cost	0.007	0.018	0.006	0.390	0.697	0.817	1.223	4.255
Perceived Physical Risk	-0.322	0.037	-0.317	-8.774	0.000	0.147	6,816	5.660
Perceived Complexity	-0.650	0.035	-0.662	-18.335	0.000	0.147	6.812	13.814
Dependent Variable: Perceived Value								
R: 0.960; R^2: 0.922; Adjusted R^2: 0.922; F for the model = 1604.384; p=0.000; D-W: 1.990								

When examining Table 14, perceived sacrifices related to the use of virtual reality significantly affect the perceived value of virtual reality (F = 1604.384; p < 0.000).

Consequently, it has been revealed that the regression models established for this situation are valid and can be used in estimation processes. Sacrifices related to the use of virtual reality explain 92.2% of the perceived value of virtual reality technology.

The perceived cost dimension of virtual reality use among participants in Moscow does not significantly affect perceived value (p = 0.697). A one-unit increase in the perceived physical risk dimension of virtual reality use among participants in Moscow leads to a 0.317-unit decrease in perceived value (B = -0.317; p = 0.000), while a one-unit increase in the perceived complexity dimension leads to a 0.662-unit decrease in perceived value (B = -0.662; p = 0.000).

Table 15. Results of the Regression Analysis on the Effects of Participants' Sacrifices Regarding the Use of Virtual Reality in Baku on Perceived Value

Model	Unstandardized Coefficients		Standardized Coefficients	t	Significance Level	Tolerance	VIF	CI
	B	Standard Error	Beta					
(Fixed)	5.902	0.045		130,746	0.000			1,000
Perceived Cost	-0.247	0.042	-0.247	-5.857	0.000	0.213	4.692	4.820
Perceived Physical Risk	-0.027	0.027	-0.027	-0.998	0.319	0.513	1.949	6.584
Perceived Complexity	-0.647	0.038	-0.678	-17.194	0.000	0.244	4.094	11.078
Dependent Variable: Perceived Value								
R: 0.919; R^2: 0.844; Adjusted R^2: 0.843; F for the model = 741.950; p=0.000; D-W: 1.566								

In Table 15, perceived sacrifices related to the use of virtual reality affect the perceived value of virtual reality (F=741.950; p=0.000). Consequently, it has been revealed that the regression models established for this situation are valid and can be used in estimation processes. Sacrifices related to the use of virtual reality explain 84.4% of the perceived value of virtual reality technology.

A one-unit increase in the perceived cost dimension of virtual reality use among participants in Baku leads to a 0.247-unit decrease in perceived value (B = -0.247; p = 0.000), while a one-unit increase in the perceived complexity dimension leads to a 0.678-unit decrease in perceived value (B = -0.678; p = 0.000). The perceived physical risk dimension of virtual reality use among participants in Baku does not affect perceived value (p = 0.319).

Table 16. Results of the Regression Analysis on the Effects of Perceived Value Regarding the Use of Virtual Reality on Behavioral Intentions to Use Virtual Reality

Model	Unstandardized Coefficients		Standardized Coefficients	t	Significance Level
	B	Std. Error	Beta		
(Fixed)	0.274	0.041		6.650	<0.001
Perceived Value	0.931	0.010	0.937	93.822	0.000
Dependent Variable: Behavioral Intention to Use Virtual Reality					
R: 0.937; R^2: 0.877; Adjusted R^2: 0.877; F for the model = 8802.591; p=0.000; D-W: 1.614					

Upon examining Table 16, it is observed that the model established for Hypothesis 3, which aims to determine the effect of the perceived value of virtual reality use on behavioral intention toward virtual reality use, is significant (F value = 8802.591; p = 0.000) and that the variance explanation rate for behavioral intention toward virtual reality use is 87.7% (R2: 0.887). Accordingly, 88.7% of behavioral intention to use virtual reality is explained by participants' perceived value of virtual reality. Considering the beta coefficient, a one-unit increase in the perceived value of virtual reality applications by participants is interpreted as providing a 0.937-unit increase in behavioral intention to use virtual reality. Accordingly, Hypothesis 3 is accepted.

Table 17. Results of the Regression Analysis Conducted on the Effect of Perceived Value Regarding the Use of Virtual Reality on Behavioral Intentions According to Participants' Cities

	Model	Unstandardized Coefficients		Standardized Coefficients	t	Meaning Level
		B	Std. Error	Beta		
Moscow	**(Fixed)**	0.153	0.052		2.913	0.004
	Perceived Value	0.956	0.014	0.959	68.142	<0.001
	Dependent Variable: Behavioral Intention Toward Virtual Reality Use					
	R: 0.959; R^2: 0.919; Adjusted R^2: 0.919; F for the model = 4643.368; p<0.001; D-W: 2.065					
Baku	**(Constant)**	0.407	0.090		4.505	<0.001
	Perceived Value	0.903	0.021	0.905	43.249	<0.001
	Dependent Variable: Behavioral Intention Toward Virtual Reality Use					
	R: 0.905; R^2: 0.819; Adjusted R^2: 0.819; F for the model = 1870.486; p<0.001; D-W: 1.643					
Ankara	**(Constant)**	0.595	0.101		5.895	<0.001
	Perceived Value	0.862	0.023	0.879	37.247	<0.001
	Dependent Variable: Behavioral Intention Toward Virtual Reality Use					
	R: 0.879; R^2: 0.773; Adjusted R^2: 0.772; F for the model = 1387.313; p<0.001; D-W: 1.172					

Table 17 shows that the model established to determine the effect of the perceived value of virtual reality use on behavioral intention to use virtual reality among participants in Moscow (F value = 4643.368; $p < 0.001$); The model for participants in Baku (F value =

1870.486; p < 0.001); The model for participants in Ankara (F value = 1387.313; p < 0.001) is significant.

The variance explanation rate for participants in Moscow regarding behavioral intention to use virtual reality is 91.9% (R2: 0.919); the variance explanation rate for participants in Baku regarding behavioral intention to use virtual reality is 81.9% (R2: 0.819); and the variance explanation rate for behavioral intention to use virtual reality among participants in Ankara is 77.3% (R2: 0.773). Accordingly, 91.9% of the behavioral intention to use virtual reality among participants in Moscow, 81.9% of the behavioral intention to use virtual reality among participants in Baku, and 77.3% of the behavioral intention to use virtual reality among participants in Ankara is explained by the perceived value of virtual reality use among participants.

Considering the beta coefficients, a one-unit increase in the perceived value of using virtual reality applications among participants in Moscow is interpreted as leading to a 0.959-unit increase in behavioral intention to use virtual reality; among participants in Baku, a 0.905-unit increase; and among participants in Ankara, a 0.879-unit increase.

Table 18. Results of the Regression Analysis on the Effects of Participants' Thrill-Seeking on Their Behavioral Intentions to Use Virtual Reality

Model	**Unstandardized Coefficients**		**Standardized Coefficients**	**t**	**Significance Level**
	B	**Std. Error**	**Beta**		
(Fixed)	1.584	0.077		20.574	<0.001
Thrill Seeking	0.674	0.021	0.683	32.780	<0.001
Dependent Variable: Behavioral Intention to Use Virtual Reality					
R: 0.683; R^2: 0.466; Adjusted R^2: 0.466; F for the model = 1074.501; p<0.001; D-W: 1.342					

Upon examining Table 18, it is seen that the model established for Hypothesis 4, which aims to determine the effect of participants' thrill-seeking on behavioral intention to use virtual reality, is significant (F value = 1074.501; p < 0.001) and that the variance explanation rate for behavioral intention to use virtual reality is 46.6% (R2: 0.466). Accordingly, 68.3% of behavioral intention to use virtual reality is explained by participants' thrill-seeking. Considering the beta coefficient, a one-unit increase in participants' thrill-seeking is interpreted as providing a 0.683-unit increase in behavioral intention toward using virtual reality. Based on this situation, Hypothesis 4 is accepted.

Table 19. Results of the Regression Analysis Conducted on the Effect of Participants' Thrill-Seeking on Behavioral Intentions According to Their Cities

	Model	Unstandardized Coefficients		Standardized Coefficients	t	Significance Level
		B	Std. Error	Beta		
Moscow	**(Fixed)**	0.585	0.107		5.459	<0.001
	Thrill Seeking	0.911	0.032	0.819	28.835	<0.001
	Dependent Variable: Behavioral Intention Toward Virtual Reality Use					
	R: 0.819; R^2: 0.671; Adjusted R^2: 0.671; F for the model = 831.465; p<0.001; D-W: 1.654					
Baku	**(Constant)**	2.550	0.142		17.990	<0.001
	Thrill Seeking	0.449	0.037	0.516	12.220	<0.001
	Dependent Variable: Behavioral Intention Toward Virtual Reality Use					
	R: 0.516; R^2: 0.266; Adjusted R^2: 0.264; F for the model = 149.319; p<0.001; D-W: 1.276					
Ankara	**(Constant)**	2.646	0.136		19.439	<0.001
	Thrill Seeking	0.428	0.034	0.524	12.420	<0.001
	Dependent Variable: Behavioral Intention Toward Virtual Reality Use					
	R: 0.524; R^2: 0.274; Adjusted R^2: 0.273; F for the model = 154.253; p<0.001; D-W: 0.941					

Table 19 shows that the model established to determine the effect of excitement seeking among participants in Moscow on behavioral intention to use virtual reality (F value = 831.465; $p < 0.001$); The model for participants in Baku (F value = 149.319; $p < 0.001$); The model for participants in Ankara (F value = 154.253; $p < 0.001$) is found to be significant.

The variance explanation ratio for participants in Moscow regarding behavioral intention to use virtual reality was 67.1% (R2: 0.671); the variance explanation ratio for participants in Baku regarding behavioral intention to use virtual reality was 26.6% (R2: 0.266); and the variance explanation rate for participants in Ankara regarding behavioral intention to use virtual reality was 27.4% (R2: 0.274). Accordingly, 67.1% of the behavioral intention to use virtual reality among participants in Moscow, 26.6% of the behavioral intention to use virtual reality among participants in Baku, and 27.4% of the behavioral intention to use virtual reality among participants in Ankara is explained by participants' thrill-seeking.

Considering the beta coefficients, a one-unit increase in thrill-seeking among participants in Moscow is interpreted as leading to a 0.819-unit increase in behavioral intention to use virtual reality; among participants in Baku, a 0.516-unit increase; and among participants in Ankara, a 0.524-unit increase.

CONCLUSION

Today, developments in technology have had a profound impact on every aspect of life, from individuals' daily lives to business activities. The spread of technology has led to numerous innovations in product and service delivery processes, creating diverse experiences for consumers. These technologies, which increase the interaction between physical reality and the virtual world, also influence each other and significantly accelerate the development process. Considering all these developments, technology is becoming increasingly widespread in the travel and tourism industry today, as it enables people to interact in a virtual environment beyond the traditional use of technology. In the tourism industry, numerous virtual reality applications are utilized in travel decision-making processes, including museums, accommodation businesses, virtual tours created for destinations, advanced marketing techniques, collaborations between stakeholders in the tourism sector, employee training, virtual events, and historical and cultural preservation. In general, virtual reality applications offer exciting opportunities for the tourism industry, enhancing the way individuals discover, plan, and experience destinations. Considering these benefits, the advancement of technology is making virtual reality increasingly important in shaping the future of tourism. Considering all these developments, research on the use of virtual reality in the tourism sector, like in all other fields, has increased in both quality and quantity. This study aims to determine the effect of potential tourists' perceived benefits and sacrifices associated with using virtual reality on their perceived value of this technology. Additionally, it seeks to investigate whether the perceived value and potential tourists' search for excitement influence their behavioral intention, making an international comparison. In line with the research's purpose, a literature review was conducted, and questionnaires were created in Russian for Moscow, in Azerbaijani for Baku, and in Turkish for Ankara. Due to its implementation in three different countries, the minimum wages of the countries were taken into account in the rating system created to determine the income levels of the participants. The survey was conducted in Moscow, Baku, and Ankara using both face-to-face and online questionnaires, with 1,233 participants. Based on the findings, the following conclusions were reached:

1. → **Perceived Benefits:** Perceived benefits regarding the use of virtual reality have a positive effect on perceived value. This result is similar to the findings of studies in the literature by Disztinger et al. (2017), Han et al. (2018), Gibson and O'Rawe (2018), and González-Rodriguez et al. (2020). When all participants were evaluated together, perceived enjoyment was the factor that had the most significant impact on perceived value. The dimensions of immersiveness and usability show cross-national differences. While perceived immersiveness was the factor with the most significant

impact on participants in Ankara and Baku, perceived enjoyment was found to have the most substantial impact on perceived value among participants in Moscow.

2. → **Perceived Value:** Perceived sacrifices associated with the use of virtual reality harm perceived value. This result is consistent with studies by Soon et al. (2013), Escandon-Barbosa et al. (2021), Mol et al. (2022), and Vieira et al. (2022) in the literature. The dimensions of perceived cost, physical risk, and complexity determine this effect. While perceived cost and complexity stood out for participants in Ankara and Baku, perceived value ( ) was more decisive for participants in Moscow in terms of physical risk and complexity. Overall, the difficulty of use (complexity) emerged as the most important factor affecting perceived value. The factors of perceived cost and perceived risk, on the other hand, differed between cities.

3. **Perceived Value→ Behavioral Intention:** Perceived value has a strong positive effect on behavioral intention to use virtual reality technology. This indicates that participants' intention to use the technology increases in direct proportion to the value they perceive from their virtual reality experiences. In other words, when users find virtual reality valuable, meaningful, and helpful, they become more willing to use this technology. The high level of this effect indicates that as perceived value in virtual reality increases, there will be a parallel and substantial increase in users' behavioral tendencies. Therefore, in the widespread adoption of virtual reality applications, it is crucial to offer experiences that increase the perceived benefit to the user, as well as the functional aspects of the technology. These results are similar to those obtained in the studies by Straub (2009), Jeng et al. (2017), Adams et al. (2017), Tussyadiah et al. (2018), Li et al. (2020), Sancho-Esper et al. (2022), Wu and Kim (2022), Teng et al. (2024), and Sinha et al. (2025).

4. **Thrill-Seeking→ Behavioral Intent:** Participants' thrill-seeking tendencies have a positive effect on their behavioral intent to use virtual reality technology. This finding is consistent with the results obtained in the studies by Park and Stangl (2020), Hwang and Chung (2023), and Yuan and Hong (2024) in the literature. Participants in Moscow showed the highest impact in this regard, while participants in Baku and Ankara showed a lower level of impact.

Recommendations based on the findings are presented below:

- When developing virtual reality applications, it is believed that considering factors that directly increase the value perceived by users will enhance the virtual reality experience and satisfaction levels.
- The immersiveness factor in the use of virtual reality applications varies across nationalities. Therefore, it is believed that creating personalized products by taking user characteristics into account will increase the virtual reality experience and satisfaction level.
- T To eliminate complexity, one of the factors that complicates the use of virtual reality applications, simpler interfaces, user-friendly designs, and artificial intelligence applications, such as voice assistants, should be supported. Furthermore, considering that perceived complexity reduces perceived value, tools such as instructional videos, first-time use assistants, live support, and beginner mode should be integrated for users to enhance their experience.

Recommendations for future studies are presented below:

- The study was conducted in three cities: Ankara, Baku, and Moscow. It is recommended that future studies be conducted in different countries, cities, or in the context of different cultural factors to provide a broader perspective and compare the findings and results of this study.
- It is recommended that the study be repeated over time to reveal changes in individuals' perceptions and intentions over time, and/or to be repeated, taking into account different factors that affect the user experience. Furthermore, it is recommended that in-depth analyses be conducted, taking into account demographic differences among participants, such as age, gender, and income level, and that the effect of demographic characteristics on variables be examined in detail.
- As the study is designed quantitatively, it is also recommended that in-depth interviews, focus group discussions, and observations be conducted to reveal users' perceptions in greater detail.

- As the study is designed quantitatively, it is also recommended that in-depth interviews, focus group discussions, and observations be conducted to reveal users' perceptions in greater detail.

- In addition to these recommendations, for future studies, it is suggested to examine the impact of variables on a sectoral basis by focusing on specific application areas such as education, health, tourism, and gaming; and to conduct studies on users' emotional responses such as excitement and stress, and cognitive assessments, rather than variables such as perceived value/perceived benefit.

REFERENCES

Adams, P., Farrell, M., Dalgarno, B. & Oczkowski, E. (2017). Household Adoption of Technology: The Case of High-Speed Broadband Adoption İn Australia. *Technology in Society*, 49, 37–47. https://doi.org/10.1016/j.techsoc.2017.03.001

Alpar, R. (2013). *Çok Değişkenli İstatistik Yöntemler.* Ankara: Detay Yayıncılık

Arıkan, R. (2011). *Araştırma Yöntem ve Teknikleri*. Nobel Dağıtım. Ankara.

Ateş , A. & Sunar , H. (2024). Marka Değeri ve Sosyal Medya Arasındaki İlişki: Türk Sivil Havacılık Sektöründe Bir Araştırma. *Premium E-Journal of Social Sciences (PEJOSS)*, *8*(47), 1308–1320. https://doi.org/10.5281/zenodo.14020757

Ateş, A. & Sunar, H. (2024b). Turist Deneyim Kalitesinin Destinasyon İlişkisel Değerine ve Turist Sadakatine Etkisi. *Bingöl Üniversitesi Sosyal Bilimler Enstitüsü Dergisi*, 28, 439-454. https://doi.org/10.29029/busbed.1483440

Ateş, A., Sunar, H. & Coşkuner, M. (2020). Sanal Gerçekliğin Müzelerde Kullanılmasına Yönelik Bir Araştırma, Global Transformation and Differentiation II, Digitalization and The Future of Digital Society (Ed. Kolukırık, S. & Pehlivanlı, R.) Kongre Kitabı, 12-14 Mart, Akdeniz Üniversitesi, Antalya. ss. 8-14.

Buhalis, D. & Law, R. (2008). Progress in information technology and tourism management: 20 years on and 10 years after the Internet—The state of eTourism research. *Tourism Management*, 29(4), 609–623. https://doi.org/10.1016/j.tourman.2008.01.005

Burdea, G. C. & Coiffet, P. (2003). *Virtual Reality Technology*. John Wiley & Sons.

Büyüköztürk, Ş. (2009). *Sosyal Bilimler İçin Veri Analizi El Kitabı*, Pegem Akademi, Ankara.

Cohen, L., Manion, L. & Morrison, K. (2000). *Research Methods in Education*, (5th edition). London: Routledge.

Craig, A. B., Sherman, W. R. & Will, J. D. (2009). *Developing Virtual Reality Applications: Foundations of Effective Design*. Morgan Kaufmann.

Dilwala, Sh. (2023). 7 Best VR Controllers For Android And PC. https://techhunterds.com/best-vr-controllers-for-headsets/.

Disztinger, P., Schlögl, S. & Groth, A. (2017). Technology acceptance of virtual reality for travel planning. In R. Schegg, & B. Stangl (eds), Information and Communication Technologies in Tourism 2017: Proceedings of the International Conference, Rome, Italy, January 24–26, 2017 (pp. 255–268). Springer International Publishing.

Durmaz, C., Bulut, Y. & Tankuş, E. (2018). Sanal Gerçekliğin Turizme Entegrasyonu: Samsun? Daki 5 Yildizli Otellerde Uygulama. Turkish Journal of Marketing, 3(1), 32-49.

Escandon-Barbosa, D., Salas-Paramo, J., Meneses-Franco, A. I. & Giraldo-Gonzalez, C. (2021). Adoption of New Technologies in Developing Countries: The Case of Autonomous Car Between Vietnam and Colombia. *Technology in Society*, 66, 101674. https://doi.org/10.1016/j.techsoc.2021.101674

George, D. & Mallery, M. (2010). *SPSS for Windows Step by Step. A Simple Guide and Reference*, 17.0 update (10th ed.). Pearson

Gibson, A. & O'Rawe, M. (2018). Virtual reality as a travel promotional tool: Insights from a consumer travel fair. In T. Jung, & M. tom Dieck (eds), Augmented reality and virtual reality: Empowering human, place and business (pp. 93–107). Cham: Springer.

González-Rodríguez, M. R., Díaz-Fernández, M. C. & Pino-Mejías, MÁ. (2020). The impact of virtual reality technology on tourists' experience: A textual data analysis. *Soft Computing*, *24*(18), 13879–13892. https://doi.org/10.1007/s00500-020-04883-y

Guttentag, D. A. (2010). Virtual reality: Applications and implications for tourism. *Tourism Management*, 31(5), 637–651. https://doi.org/10.1016/j.tourman.2009.07.003

Güleç, U. T. (2019). Pazarlamada Artırılmış Gerçeklik ve Sanal Gerçeklik Uygulamalarının Kullanımı: Türkiye ve Dünyadaki Örnekler Çerçevesinde Bir Değerlendirme, Yükseklisans Tezi, KTO Karatay Üniversitesi, Konya.

Habibi, A., Ariffin, A. A. M. & Aziz, N. A. (2018). The influence of perceived benefits, perceived sacrifices and perceived value on behavioural intention in the context of medical tourism. *International Journal of Services, Economics and Management*, 9(3-4), 295-316.

Hair Jr, J. F., Matthews, L. M., Matthews, R. L. & Sarstedt, M. (2017). PLSSEM or CB-SEM: Updated guidelines on which method to use. *International Journal of Multivariate Data Analysis*, 1(2), 107-123.

Han, D. D., Dieck, M. C. T. & Jung, T. (2018). User experience model for augmented reality applications in urban heritage tourism. *Journal of Heritage Tourism*, *13*(1), 46–61. https://doi.org/10.1080/1743873X.2016.1251931

Hwang, G. & Chung, K. S. (2023). Virtual Reality Users' Stress Reduction and Sport Participation Intention: Effects of Sensation Seeking and Sense of Presence. *Journal of sport behavior*, *46*(1).

Jeng, M. Y., Pai, F. Y. & Yeh, T. M. (2017). The Virtual Reality Leisure Activities Experience on Elderly People. *Applied Research in Quality of Life*, *12*(1), 49–65. https://doi.org/10.1007/s11482-016-9452-0

Kalaycı, Ş. (2010). *SPSS Uygulamalı Çok Değişkenli İstatistik Teknikleri* (Vol. 5, p. 359). Ankara, Turkey: Asil Yayın Dağıtım.

Keser, A., Öngen Bilir, B. & Aytaç, S. (2017). Niceliksel İş Yükü Envanterinin Geçerlik Ve Güvenirlik Çalışması. *Iş, Güç: The Journal of Industrial Relations ve Human Resources*, *19*(2), 55-78.

Kim, H. W., Chan, H. C. & Gupta, S. (2007). Value-based adoption of mobile internet: An empirical investigation. *Decision Support Systems*, 43(1), 111–126. https://doi.org/10.1016/j.dss.2005.05.009

Korkmaz, Ö. F., Soğukoğlu Korkmaz, S. & Sunar, H. (2023). Kamu ve Özel Bankalarda Mobil Bankacılık Özelliklerinin Mobil Bankacılık Kalitesi Üzerine ve Mobil Bankacılık Kalitesinin Banka İtibarı Üzerine Etkisinin Belirlenmesi: Giresun İli Örneği, *Akşehir Meslek Yüksekokulu Sosyal Bilimler Dergisi*, 16, 146-160.

Li, H., Gupta, A., Zhang, J. & Flor, N. (2020). Who Will Use Augmented Reality? An İntegrated Approach Based on Text Analytics And Field Survey. *European Journal of Operational Research*, *281*(3), 502–516. https://doi.org/10.1016/j.ejor.2018.10.019

Mol, J. M., Botzen, W. W. & Appendices, J. E. (2022). After the Virtual Flood: Risk Perceptions and Flood Preparedness After Virtual Reality Risk

Communication. *Judgment and Decision Making*, 17(1), 189. http://journal.sjdm.org/20/200909/jdm200909.html(open in a new window)

Özasma, H. İ. (2020). Cin Algısı Ölçeği: Geçerlik ve Güvenirlik Çalışması. *Kilis 7 Aralık Üniversitesi İlahiyat Fakültesi Dergisi*, *7*(1), 627-644.

Park, S., & Stangl, B. (2020). Augmented Reality Experiences and Sensation Seeking. *Tourism Management*, *77*, 104023.

Pett, M. A., Lackey, N. R. & Sullivan, J. J. (2003). *Making sense of factor analysis: The use of factor analysis for instrument development in health care research*. Sage 77.

Sancho-Esper, F., Ostrovskaya, L., Rodriguez-Sanchez, C. & Campayo-Sanchez, F. (2022). Virtual Reality in Retirement Communities: Technology Acceptance And Tourist Destination Recommendation. *Journal of Vacation Marketing*. https://doi.org/10.1177/13567667221080567

Sherman, W. R. & Craig, A. B. (2019). *Understanding Virtual Reality: Interface, Application, and Design* (2nd ed.). Morgan Kaufmann.

Sinha, N., Dhingra, S., Sehrawat, R., Jain, V. & Himanshu. (2025). Customers' Intention to Use Virtual Reality in Tourism: A Comprehensive Analysis of Influencing Factors. *Tourism Review*, *80*(3), 742-766.

Soon, C. S., He, A. H., Bode, S. & Haynes, J. D. (2013). Predicting Free Choices for Abstract Intentions. *Proceedings of the National Academy of Sciences*, 110(15), 6217–6222. https://doi. org/10.1073/pnas.1212218110

Straub, E. T. (2009). Understanding technology adoption: Theory and future Directions for Informal Learning. *Review of Educational Research*, 79(2), 625–649. https://doi.org/10.3102/0034654308325896

Sunar, H. & Ateş, A. (2025). Müzelerde Teknoloji ve Yapay Zekâ Kullanımı Üzerine Yapılan Çalışmaların İncelenmesi. *Beykent Üniversitesi Sosyal Bilimler Dergisi*, 18(1), 43-62. https://doi.org/10.18221/bujss.1666693

Tabachnick, B. G. & Fidell, L. S. (2013). *Using Multivariate Statistics* (6th ed.). Pearson.

Teng, Y. M., Wu, K. S. & Kuo, F. J. (2024). Virtual Reality Tourism: Intention to Use Mediated by Perceived Usefulness, Attitude and Desire. *Tourism Review*. https://doi.org/10.1108/TR-02-2024-0133

Tussyadiah, I. P., Wang, D., Jung, T. H. & Tom Dieck, M. C. (2018). Virtual Reality, Presence, and Attitude Change: Empirical Evidence From Tourism. *Tourism management*, *66*, 140–154. doi:10.1016/j.tourman.2017.12.003

Tussyadiah, I. P., Wang, D., Jung, T. H., & Tom Dieck, M. C. (2018). Virtual reality, presence, and attitude change: Empirical evidence from tourism. *Tourism Management*, 66, 140–154. https://doi.org/10.1016/j.tourman.2017.12.003

Vieira, K. M., Potrich, A. C. G., Bressan, A. A., Klein, L. L., Pereira, B. A. D., & Pinto, N. G. M. (2022). A Pandemic Risk Perception Scale. Risk Analysis, 42(1), 69–84. https://doi.org/10. 1111/risa.13802

Vishwakarma, P., Mukherjee, S. & Datta, B. . (2020). Travelers' intention to adopt virtual reality: A consumer value perspective. *Journal of Destination Marketing ve Management*,(17), 100456.

Wu, Y. F. & Kim, E. Y. (2022). Users' Perceptions of Technological Features in Augmented Reality (AR) and Virtual Reality (VR) in Fashion Retailing: A Qualitative Content Analysis. *Mobile Information Systems*, *2022*, 1–13. https://doi.org/10.1155/2022/3080280

Yazıcıoğlu, Y. & Erdoğan, S. (2004). *SPSS Uygulamalı Bilimsel Araştırma Yöntemleri*. Ankara: Detay Yayıncılık, 49-50.

Yuan, A., & Hong, J. (2024). Impacts of Virtual Reality on Tourism Experience and Behavioral İntentions: Moderating Role of Novelty Seeking. *Journal of Hospitality & Tourism Research*, *48*(6), 1067-1080.