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Investigating the effect of Perceived Usefulness and Perceived Ease of use of Immersive 360-degree videos on behavioral intentions in Tourism Marketing of Pakistan

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Abstract: The growth in the tourism sector calls for innovative strategies to attract customers towards the country and tourist destination. Immersive 360-degree videos experiences offer experiential solutions for marketers, particularly in the tourism industry more effectively. Therefore, the theme of the study is to determine the effect of Perceived usefulness and Perceived Ease of use of Immersive 360-degree videos on behavioral intentions to visit the tourist destination being promoted, in the tourism marketing of Pakistan. The data was collected from 250 individuals, who have a keen interest in the tourism sector of Pakistan and are in the age group of 18 to 35. The results of the study indicate that there is a positive relationship between Perceived usefulness and Perceived Ease of use of Immersive 360-degree videos with behavioral intentions to visit the tourist destination.

Keywords: Perceived Usefulness; Perceived Ease of use; 360-degree videos; Tourism Industry

1. Introduction

Pakistan tourism sector took a lot of beating due to the issues of intolerance and extremism etc. and tourism revenue has greatly declined. In the last couple of years, things have improved a lot but the image building of the country from a tourism perspective needs a lot of attention. Image building is a matter of both perception and reality. Deteriorating the image of Pakistan tourism requires some innovative marketing techniques to change public perception about its tourism sector. Better and improved tourism marketing can ensure a favorable image and increase tourist flow to the wonderful tourist destination, remarkable landscapes and rich culture of Pakistan. Pak Wire (2015) explained the untapped potential of Virtual Reality and Immersive 360-degree videos which the country can utilize to boost its tourism sector. Pakistan, known globally for its unique geographical features and culture, has been infested with the menace of terrorism for well over a decade. As a frontline ally in the war against terrorism, heavy

human casualties have also led to equal or greater losses in the economic sector. The country was a favorite tourist destination for people from across the world before the tragic 9/11 attacks changed the global security scenario. Imagine the Tourism Department providing potential visitors from Pakistan and abroad with 360-degree videos on Facebook and YouTube via head-mounted devices or mobile of the breathtaking landscape of Jheel Saiful Mulook, Potohar mountains (Punjab), desert dunes of Thar (Sindh), inspiring views from Gwadar coast (Balochistan), Swat valley (KP), snow-capped peaks in Skardu (Gilgit-Baltistan), the cool greenery of Palandri (Azad Kashmir) or the calm and peaceful Valley of Kumrat.

In the tourism industry, Pakistan has great potential, ranging from cultural diversities, friendly and hospitable population, deserts, mountains, rivers, scenic landscapes, seashores and much more than the country can offer to national and international tourists. Arshad, Iqbal and Shahbaz, (2018), all it requires are unique and effective marketing efforts to promote those areas.

Cook, Hsu, and Marqua (2014) suggest that marketing in the tourism business is unique, due to it requires an awareness of the distinctive qualities of their tourism experiences as well as the response of traveling customers. Huang, Backman, Backman and Chang, (2016) Technology combined with the internet has a phenomenal effect on the transformation of the tourism industry and the customer perception of destinations The continuous development in marketing tools and techniques, and the steady growth in technology and internet-enabled marketers to target and attract customers more effectively and efficiently. Like all other sectors, the tourism industry is also dependent on marketing for growth and development.

Garcia- Crespo *et al* (2009) in their research states a more immersive and enjoyable technology with relevant services is the need of the day for the tourism sector. Cutting-edge technologies in the visual area and the mass appeal of platforms such as social media could greatly affect the tourism industry and enhance user experiences by providing more efficient, enjoyable, convenient and immersive experiences. Arshad, (2015) in his research tried to explore and integrate new technologies in the promotion of the tourism industry and recommended social media as one of the alternatives. Furthermore, the research suggested that more research should be conducted regarding the promotion and marketing of Pakistan tourist destinations. A study conducted by Arshad *et al*, (2018) on tourism challenges in Pakistan, concluded that to motivate national and international tourists and build their confidence to visit the country through promotional activities because the prevailing situation of the tourism industry is discouraging.

Yung and Khoo-Lattiore, (2019) recommended in their research that in the future, research should look into the application of VR in a tourist destination to make tourism marketing more attractive. One of the major focuses was on 360-degree tourism, which is currently absent from the literature. The easy availability of 360 cameras and abundance of devices and headsets which support 360-degree videos has created more opportunities in this field. Now anyone who owns one such camera can generate such content without the need for complex technical know-how. This all means a great potential for 360-degree videos. Therefore, in the current study, the researcher will examine the impact of perceived usefulness and perceived convenience of immersive 360-degree videos on behavioral intentions in tourism marketing in Pakistan?

2. Literature Review

2.1 Tourism in general

"Tourism industry can be defined as a study of a person who is away from his regular environment, and his needs in this new environment needs to be responded, and to study the effect of both the industry and the traveler on host socio-cultural, economic and physical environments" (J. Jafari & Ritchie, 1981). The tourism sector is also known as the travel industry. Travel, like other industries, represents or provides a variety of commodities and services. Accommodations, restaurants, transportation, travel agencies, recreation, and the like are some of the most well-known "goods and services" of the travel sector. Most of these products are designed with travelers' needs in mind (J. J. T. R. R. Jafari, 1979).

Ketter and McMillan (2016) defined tourism marketing as the tool and techniques including marketing mix and promotional mix when used specifically for the tourism industry for travel planning, destination choice or image, etc. is known as tourism marketing. The significance of communication techniques and strategies for any organization related to tourism is inevitable, especially its use in promoting an area or a tourist destination. Halloran, (2016) Tourism marketing is selling a tourist destination to a potential traveler while keeping a proper balance between the needs of the customer and the goals of the organization (Donohoe, 2012). Jafari, (J. J. A. o. t. r. Jafari) defines the industry of tourism as a market container of multiple services and goods and it shows how tourists choose the offerings and services on that particular tourist spot. He also explained the satisfaction of the customer and its role in his willingness. The tourist destination is a distinct area with a proper brand that offers all the products and services in combination with an overall environment that the target audience can easily understand (Hartwell. H., 2016). Similarly, Ritchie and Zins, (1978) focused more on the attractiveness of a tourist spot and understanding it in more detail. He tries to identify the factors that contribute to offering customers what they are expecting and what was promised to them by a certain destination.

2.2 Tourism and Immersive Technologies

The importance of VR Technologies in the planning step of traveling and awareness of a place is inevitable, and with the possibility of further improvement of this field that can offer even more realistic, its unique testing capabilities and more interactive environment of a tourist destination in a virtual form, make it even more valuable for tourist planners (Cheong, 1995; Sussmann & Vanhegan, 2000).

Researchers who used Stimulus Organism Response) Model (SOR) to further explore the behavior of a consumer in virtual tourism found out that both the tourism companies and its brands were very effective indirectly influencing the decisions and opinions of the user because of the characteristics of this technology such as immersive feeling, unique experience and a certain amount of control or interactivity (Kim, Lee, & Jung, 2020).

Emotions of a tourist and the feeling of enjoyment and fun that a potential tourist feel has a substantial role in determining the behavior intentions of that person to visit the specific tourist spot, and at the same time it also helps convert the potential tourist into an actual tourist through motivation (Jung, tom Dieck, Moorhouse, & tom Dieck, 2017).

The main focus and visions behind Virtual technologies integration in tourism are to cater to the needs of future tourists because of the continuous development in this field and the growing interests of consumers and investors. This creates a great potential for VR tourism in fulfilling the needs of the tourist

(Nayyar, Mahapatra, Le, Suseendran, & Technology, 2018). Proper management and planning efficiency are the upcoming trends identified in the tourism industry. The scope is further widened as this new technology offers realistic, easy-to-use interactive platforms for tourists so that they can effectively plan their activities, experience a potential tourist destination in advance and plan the overall trip (Tussyadiah, Wang, Jung, & tom Dieck, 2018). Business-related to tourism such as hotels, cruise ships, etc has already started the use of VR technologies for a preview of different experiences that their business can offer to a tourist as part of their marketing campaigns (Samuely, 2016).

The fact that these technologies provide a bundle of information and preview of the tourist destination, makes it more important in the initial stages of tourism purchase processes (Kim, et al., 2020). Tourist attractions such as museums, hotels, cultural heritage sites zoo, etc. provide virtual tours to their potential tourists in an immersive way with real images of the site (Bowman, Hodges, Allison, Wineman, & Environments, 1999). VR technology has also transformed the process of how rooms are booked in a hotel, as the potential visitor can have virtual tours of the real rooms such as Marriot hotels provide such preview insight of the specific destination (Neuburger, Beck, & Egger, 2018). In upcoming years, Virtual tourism will be an invaluable marketing platform for organizations and will dictate them to make customized experiences for their potential customers and fulfill their needs more efficiently with the help of VR technologies (Barnes & Potential, 2016).

2.3 Concepts Immersive 360-degree videos:

360-degree immersive video is an innovative visual platform that enables users to completely immerse in the content that is offered through a 360-degree method. The users had the liberty to look around while a scene unfolds in front of them in a linear form, everything that the user sees is from a camera perspective like that happened in more conventional media such as movies and dramas (Sheikh, 2016).

According to a BBC report, the 360-degree video enables the viewer to be in control of where they want to look, the place they want to look can be altered based on device or headset movement. 360-degree video can also be seen on a flat-screen provided that a compatible player is provided, there is no need for any additional hardware. The user experience is analogous to a glimpse into what is behind a flat-screen device's frame. 360-degree video is a one-dimensional photographic reality bubble (monoscopic means that the view is from one lens or eye, as opposed to stereoscopic, which uses two lenses or eyes). In 360degree video, there is no stereoscopic 3D effect; wherever a viewer looks in the bubble, it appears as if it were a regular snapshot (Conroy & Development, 2017).

Many studies conducted by Chambel, Chhaganlal and Neng, (2011) and Rhee, Petikam, Allen, Chalers and Graphics (2017) explained 360-degree video as one that creates an environment of immersion by providing spherical video recordings or lives that ensure maximum coverage of all video angles which is not possible in a normal video. Vosmeer and Schouten, (2014) in their studies presented limitations of 360-degree videos that like virtual reality do not allow you to move around or modify anything within the video. According to them 360-degree videos turns a viewer into an observer inactive state or a participant in passive form.

Reyna (2016) believes that by employing 360-degree videos, viewers would be able to experience the entire area and engage more deeply with the content. Moreover, the users will be able to drag the 360-

degree video up, down, left and right, giving them an interactive experience, they have never had before. In other words, the user has control over where and when they look. 360-degree video streaming is now available on platforms like YouTube, Facebook and Vimeo, allowing users to publish and share their work with the rest of the globe. There is a large selection of 360-degree cameras on the market, with over 20 different brands (US$90 - 1,000) (Reyna & Meier, 2018).

Furthermore, devices and headsets for viewing 360-degree videos are become more affordable, such as Google Cardboard, which employs a split-screen. Supermarkets and gadget stores sell these headphones for between $10 and $100. According to reports, 360-degree videos provide a distinct sensation of presence and immersion that is not attainable with standard media. This immersion is the result of viewers emotionally and meaningfully interacting with the content. The stereoscopic sound in these videos, for example, helps viewers interact with the information by drawing attention to the plot. 360-degree videos are a new frontier that opens up a world of possibilities for new and inventive digital media communication (Reyna & Meier, 2018).

A study conducted by Huang *et al*, (2016) mentioned that their study focused only on 3D tourism, which is not the real environment but computer graphics; therefore he recommended that for Future research user experience and behavioral intention need to be studied in the real environment with virtual setting. This identified the theoretical gap for this research to study behavioral intention through 360-degree videos which is a recorded video of a real tourist destination rather than its 3D model.

YouTube regarded 360-degree video as an innovative trend that is meant to feel like you are present in the place at the moment (YouTube, 2015a). The social media examiner explained 360-degree videos as such which cover all possible angles. It gives you control over what you see through your mobile devices or headset as opposed to the traditional video where you are dependent on what video shows you. Mobile devices and tablets provide a much better viewing experience as compared to traditional video because you can look around just by tilting your device instead of clicking and dragging. Two big social media platforms, i-e. Facebook and YouTube already invested in this area and provided wonderful opportunities for online marketing (Calero, 2015).

2.4 Technology Acceptance Model: Concepts of PU, PEOU and BI

Theory of Reasoned Action (TRA) serves as the basis for the model of technology known as The Technology Adoption Model (TAM), this model was introduced by Davis (1986) was a model widely studied within the sphere of social psychology (Davis., 1989). This model has also undergone different changes over time but is still considered as one of the priority models in understanding behavior in terms of technology, due to its application in different sectors, the model has a lot of variations over time.

Perceived ease of use is defined by Davis (1985) as "the degree to which a person believes that using a particular system would be free of effort". Davis (1989) defined perceived usefulness in his TAM theory. Several previous research looked at technology literature from the perspective of customer behavior to see if there was a link between behavioral goals and perceived utility and simplicity of use (Childers, Carr, Peck, & Carson, 2001; Koufaris, 2002; Pavlou, 2003).

Ha and Stoel, (2009) determined the importance of both usefulness and ease plays an important role in behavioral intentions from an e-shopping context. Ayeh, Au, and Law, (2013) examined social media or content developed by users themselves for tourism and planning and consumer-generated media for travel planning, signifying the role of usefulness and ease of use in forming travel intentions. Venkatesh

and Davis, (2000) in their study explained the usefulness of the technology acceptance model due to its ease of use. They believed that a system that is easy to use will have more acceptance from users.

Perceived Ease of Use is described as a person's perception of how easy it would be to use immersive 360-degree videos, while perceived usefulness is defined as a person's belief that using immersive 360-degree videos would be beneficial in the context of this study. The intent of a user to visit a tourist site that is marketed through immersive 360-degree videos is described as behavioral intentions in the context of this study.

The major elements in new technology acceptability and behavioral intention are perceived usefulness and perceived simplicity of use. Perceived usefulness has a direct association with behavioral intentions, but perceived ease of use has an indirect relationship with behavioral goals (Agrebi, Jallais, & services, 2015; F. D. J. M. q. Davis, 1989; Okumus, Bilgihan, & Technology, 2014; Ozturk, Bilgihan, Nusair, & Okumus, 2016; Tarhini, Hone, & Liu, 2014).

Davis, (1989) signifies the importance of behavioral intention in the technology acceptance model in a computer-generated environment and its effect on actual use. According to Davis, (1989), the measure of the likelihood that a person will purchase or use a product or service depends on the behavioral intentions of the user. There is a high link between intention to engage in action and actual behavior, according to both empirical and theoretical evidence (Dabholkar & Bagozzi, 2002; Vijayasarathy & management, 2004). In the context of tourism, a behavioral intention is known as travel intention, and it is described as a planned travel activity or vacation. The intention is thought to be the immediate precursor to action (Zhang, Prybutok, & Koh, 2006)

In the case of Perceived Ease of Use, the users develop a positive attitude towards such technologies which are simple to use without much complications (Kallweit, Spreer, Toporowski, & services, 2014). In addition, Okumus and Bilgihan (2014) in their research studied the direct relationship between perceived ease of use and behavioral intentions and concluded that it can positively influence behavioral intentions (Okumus, et al., 2014).

3. Research Methodology

McMillan and Schumacher (2010) defined research as collecting and analyzing logically data for a purpose in a systematic way is called research. Research methodology on the other hand is a planned purposeful systematic process for a specific research problem to yield data (McMillan & Schumacher, 2010).

3.1 Research design

The need for a specific research design generates from the problem statement, research objectives and questions. Research design clarifies the type of study that whether it should be predictive, explanatory, or descriptive. Differences between research designs such as cross-sectional, longitudinal, case study comparative, etc. should be very clear to the researcher (Bryman & Bell, 2003). A study that seeks how, who, when, where, and what answers are descriptive studies while exploratory studies mostly find the answer to why questions and sometimes how questions (Cooper, Schindler, & Sun, 2003). Based on the type of data used in this paper, this is a quantitative Cross-sectional research design.

3.2 Population

The population of the study consisted of both male and female gender that are around the age of 18-65, who have a keen interest in tourism of Pakistan and plans to visit any tourist destination of Pakistan within coming one year, with an active social media presence on YouTube or Face book.

3.3 Sampling, Procedure and Sample Size

Linda explained sample stated that generalization is one of the key goals of quantitative research, because it is nearly impossible for a researcher to use whole populations, therefore inferences are drawn to get population information and then a subgroup is selected from the population that becomes the sample of the study. There are two types of sampling techniques, Probability Sampling and Non- Probability Sampling (Shields & Twycross, 2008)

The intended population of this research is both male and female gender that are around the age of 18-65, who have a keen interest in tourism of Pakistan and plans to visit any tourist destination of Pakistan within coming one year, with an active social media presence on YouTube or Face book, this number is enormous and unfortunately, due to lack of data availability, exact numbers are not present, which means unavailability so sample frame. So, performing was not possible to perform probability sampling. Hence, For this study non-probability sampling is used through purposive sampling, three screening questions are used to judge the qualification of the potential respondent. 1) Are you interested in the tourism destinations of Pakistan? 2) Do you have an active social media presence? 3) Do you have plans to visit any of Pakistan tourism destinations in the next 12 months? A simple dichotomous scale of Yes and No is used for all screening questions. The study used (Kline, 2000) and (E. Pedhazur; E. J. I. N. Y. Pedhazur, NY, 1997) methods for selecting the sample size, According to (Kline, 2000) every item of the questionnaire must have two or greater than two data set. As per (Elazar, 1982; E. Pedhazur; E. J. I. N. Y. Pedhazur, NY, 1997) every construct of the questionnaire requires fifteen or more data sets. So as per these studies, the minimum appropriate sample size is considered to be more than 100, however, this study included 250 respondents to be on the safe side to generalize the findings of the study.

3.4 Data Collection Procedure

Required data for this research was collected with the help of a questionnaire from February 2020 to May 2020, participation in this survey was on voluntary grounds, but eligibility to become a participant depended on the initial three screening questions.

The VR Headset that was used for this activity is “Samsung Gear VR; Powered by Oculus, Model SM-R324”, and Samsung Note 8 was used for displaying the video. The respondents initially required a little help from the researcher to understand the operations of VR headset and how to experience the video because it was a new experience for the majority of the respondents. Some respondents also experience motion sickness or cyber sickness while experiencing VR.

3.5 Data collection Instrument

The goal of this study was to see how strong the link between behavioral intentions and perceived utility and convenience of use was. As a result, questionnaires will be used to collect data for this study, as they have been in past studies. For this reason, 250 surveys have been completed.

Variable	Instrument Reference	No. of Items
Perceived Usefulness	Isrososiawan, Hurriyati and Dirgantari 2019	4
Perceived Ease of use	Isrososiawan, Hurriyati and Dirgantari 2019	4
Behavioral intention	Kim and Jung 2019	4
Total		**12**

4. DATA ANALYSIS

Analysis of this research investigates the association among all the variables under study through Correlation analysis. After understanding the association among variables, it explains the regression analysis of variables o understands the key effect of independent variables on dependent variables of the study.

The Product Moment Correlation analysis is used to determine the direction of a link between two variables and their closeness. Because this study uses interval scale data and the scale of this research is similarly interval, SPSS was used to calculate Pearson product-moment correlation analysis (Likert, 1932). The Pearson product-moment correlation applies the requirement that the correlation value (r) ranges from 1 to -1; the relationship's strength increases as the value approaches 1 or -1. When the value is near to 0, on the other hand, the relationship's weakness is shown. Positive values represent the same directional relationship (X rises, then Y rises), while negative values depict the opposite relationship (X falls, then Y falls) (X rises then Y drops). SPSS was used to perform correlation analysis to confirm that the association of variables that was mentioned initially, in theory, is the same so that the direction of variables and theory is aligned. Although this needs to be cleared in the beginning this type of analysis does not confirm the hypothesis acceptance or reject it only tells us about the association of the variables. Results of the correlations confirm a significant positive relationship between behavioral intentions and other variables. Behavioral Intentions is positively related with Perceived Ease of Use ($r=0.170$, $p<0.007$), and Perceived Usefulness ($r=0.245$, $p<0.00$),

Table 1: Correlation

		BI	PEOU	PU
Behavioral Intentions	Pearson Correlation	1	.170**	.245**
	Sig. (1-tailed)		.007	.000
Perceived Ease of Use	Pearson Correlation	.170**	1	.472**
	Sig. (1-tailed)	.007		.000
Perceived Usefulness	Pearson Correlation	.245**	.472**	1
	Sig. (1-tailed)	.000	.000	

This study employed regression to predict how much Y (the dependent variable: behavioral intention) will change if X (the independent variable: perceived usefulness and ease of use) changes. Sugiyono (Japanese:) is a (2012) When rising independent variables are increased or decreased in value, regression analysis is used to develop predictions about how the value of the dependent variable will change. The linear regression analysis formula is as follows: = a + box = Predicted subjects in the dependent variable If X = 0, a = Price Y (constant price) The number of increases or decreases in behavioral intentions

based on PU and PEOU is shown by the number of directions or regression coefficients. If the b value is positive, it indicates an increase; if it is negative, it indicates a decrease. X = Subjects on independent variables with specific values. Perceived Usefulness has a favorable and significant effect on Behavioral intentions, according to the findings.

Table 2 Perceived Usefulness and Behavioral Intention

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	6.188	.448	.245	13.820	.000
PU	.309	.084		3.669	.000

Regression results are given in the table 2. (B = 0.309, P= .00). The analysis showed a positive and significant effect of Perceived Ease of Use on Behavioral Intentions.

Table 3 Perceived Ease of use and Behavioral Intention

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	6.705	.443	.170	15.148	.000
PEOU	.194	.078		2.501	.013

Regression results are given in the table 3. (B = 0.194, P= .01).

5. Discussion and Conclusion

The study's findings revealed that immersive 360-degree video of a tourist site can help buyers decide whether or not to visit it. A previous study using the technology acceptance model has looked at the relationship between perceived usefulness and behavioral intentions and found a substantial positive relationship between the two variables. As a result, the current study's findings are consistent with earlier research and provide support for them. Davis showed a substantial strong positive correlation between PU (Perceived usefulness) and intention to use in his study of Perceived usefulness and user acceptability of information technology in 1986 and 1989. Multiple studies conducted in the past such as (Pavlou, 2003) earlier (Venkatesh & Davis, 2000) (Koufaris, 2002) and before that (Childers, et al., 2001); has examined technology literature from a consumer behavior point of view to determine the relationship between behavioral intentions and Perceived usefulness and all the studies displayed a positive significant association between Behavioral intentions and perceived usefulness(PU). Safroni 2019 study about acceptance of payment through mobile showed that usefulness perception of consumer has significantly and positively influenced payment through mobile phone (Isrososiawan, Hurriyati, & Dirgantari, 2019).

This study also demonstrates that the convenience or ease of use of Immersive 360-degree video of a tourist destination contributes to forming consumers' intentions to visit it. This relationship of Ease of use with intentions has been repeatedly studied by previous researchers under the technology acceptance model and they came up with a significant positive relationship between both the variables. So, the present study results are in line with previous studies and provided support to them. The same findings are presented by multiple researchers in the past who studies the perception of usefulness and ease of use at the same time. Safroni (2019) study about acceptance of payment through mobile showed that ease of use perception of the consumer has significantly and positively influenced payment through mobile phones

(Isrososiawan, et al., 2019). Venkatesh in 2000 in his study of four studies of the longitudinal field for extension of TAM displayed the same result of a significant positive relationship across all four studies of Ease of use-Intentions association (Venkatesh & Davis, 2000). Liébana Canailles Ramos de Luna and Montoro-Rios, (2017) while studying mobile payments through SMS confirms a direct association between using the payment system and its ease of use positive way the same findings were presented by another relevant study (Sufyan & Khan., 2020; Wong & Trade, 2018).

This research used simple 360-degree videos for the collection of data, and they were the main subject of the study, immersive videos also offer an interaction within a 360-degree video with the environment and can provide an even better experience and the bundle of information. Although interactive 360-degree videos are still very new future researchers can study the interactive element of 360-degree videos and explore new opportunities in this emerging field.

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