Virtual Tour: Exploration of Perceptions and Acceptance by the Communities

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Abstract

The Covid-19 pandemic that hit the world and Indonesia in 2019 had a significant impact on almost all industrial sectors. The Covid-19 pandemic forced every government from various countries to issued travel warnings, namely an appeal and a travel ban, to prevent the virus's faster and wider spread. In fact, the government issued flight cancellations from and out of the country. Restrictions on mobility at home and abroad significantly affect the tourism industry, related to the number of visits to various tourist destinations in Indonesia. Virtual reality (VR) technology in the tourism industry has emerged since the 2009s, its role is still limited as tourism promotion tools. The current condition of the Covid-19 pandemic is forcing tourism actors to rearrange strategies for using VR technology so that they can temporarily substitute and meet the needs of the community in traveling through virtual tourism. Studies related to public perception and acceptance of alternative travel through this technology have not been widely carried out. This study aims to explore the development of virtual tourism by analyzing the perception and acceptance of the Indonesian people towards virtual tourism. The research method used is the descriptive quantitative method. The data collection using a questionnaire that refers to product concept testing. This study indicates that most respondents know about virtual tours, but most have never taken virtual tours and are interested in taking virtual tours and are willing to pay. In addition, most respondents consider that virtual tourism can replace physical tourism.

Introduction

The Covid-19 pandemic that hit the world and Indonesia, especially in 2019, significantly impacted almost all industrial sectors. The Covid-19 pandemic urges every government from various countries to issue a travel warning, namely an appeal and a travel ban, to prevent the virus's faster and broader spread. In fact, until the cancellation of flights from and out of the country. The Indonesian government also issues this regulation. Restrictions on mobility at home and abroad significantly affect the tourism industry, related to the number of visits to various tourist destinations in Indonesia. Hari Santosa Sungkari, Deputy for Destination Development and Infrastructure of the Ministry of Tourism and Creative Economy, estimates that the number of foreign tourists who will travel during the Covid-19 pandemic in Indonesia only reached 2.8 to 4 million visitors, where before the Covid-19 pandemic there were 18 million visitors. Likewise with domestic tourists, which at the beginning of 2020 were estimated at 310 million, but with the Covid-19 pandemic there will only be around 140 million visitors (Karunia, 2020). The decrease in the number of tourists certainly impacts the decline in the income of businesspeople in the tourism industry, and many of them even have to stop operating.

The existence of restrictions on mobility, social distancing, and prohibitions on crowding to prevent the spread of the Covid-19 virus also limits Indonesian people's mobility in traveling. To survive during the Covid-19 pandemic, the tourism industry must develop various survival strategies to minimize the economic impact of the decline in the number of visits. Advances in information technology currently have a significant influence on business in multiple fields. Information technology can be used as a strength and opportunity for companies to increase competitiveness in the era of globalization or a world without borders, especially in the tourism industry. One of the information technologies that the tourism industry can utilize is virtual tours or virtual tours. Since 2009, Virtual Reality (VR) technology has been used as a promotional medium in the tourism industry, promoting lodging, tourist attractions, and tourist destinations (Ozman, Wahab & Ismail, 2009; Huang, 2011; Abdillah, Noor & Suryana, 2009). 2017). Indonesia has been using VR technology as a tourism promotion strategy since 2015 at the world's largest tourism exhibition, World Travel Market (WTM), held annually in London. VR technology is equipped with a variety of 360-degree videos in a short duration that fully displays the beauty of Indonesian destinations (Abdillah, Noor & Suryana, 2017).

Currently, virtual tours appear as alternative tours offered by tourist destination managers and other tourism product providers. Virtual tourism is a simulation activity of a real destination on the screen. Virtual tourism is a technology that puts the user on the screen and allows the user to increase situational awareness, visibility, capture power, and significantly analyze virtual data (Osman, Wahab & Ismail, 2009). Virtual tours are also known as panoramic tours, which simulate a location consisting of a series of images combined into one to produce a 360-degree panoramic photo. The virtual tour provider can use devices such as laptops or PCs to display 360-degree photos. The presentation of this virtual tour can use images or videos as well as 3D models. The purpose of this virtual tour is to provide the experience of "before being" somewhere by just looking at the monitor screen (Wulur, Sentinuwo & Sugiarso, 2015; Widiastini, Prayudi, Rahmawati & Dantes, 2020).

Even though VR technology in the tourism industry has emerged since the 2009s, its role is still limited to being a tourism promotion medium. However, the condition of the Covid-19 pandemic has forced tourism actors to rearrange strategies for using VR technology to temporarily substitute and meet the needs of the community in traveling. Several tourism destinations have offered virtual tours by utilizing VR technology during this Covid-19 pandemic. However, studies related to public perception and acceptance of alternative travel through this technology have not been widely carried out.

Three main problems, namely one always accompany the application of new information technology. Rejection of a change (resistance to change) in an entity or organization, 2. Lack of qualified personnel, and 3. Poor implementation planning (Turban, 2005). From an economic perspective, the extent to which people are willing to pay (Willingness to Pay/WTP) for virtual tourism still needs to be explored. In addition, studies related to virtual tourism are still limited, so there is a need to understand further the development of virtual tourism from the various existing research literature.

Research by Sukoco, Suparman, Hermanto, and Rivani (2021) on the role of Virtual Reality as a marketing tool to increase travel interest during the Covid-19 pandemic in Jakarta shows that promoting tourism using VR has proven to be effective, as long as it fulfills the four important elements of VR that must be present. Namely: virtual worlds, namely content that creates virtual worlds in the form of scenarios and scenarios; Immersion, a sensation that makes users of VR technology feel like they are in a real environment, even if it is fictitious or unreal; Sensory Feedback serves to convey information from the virtual world to the user's senses. These elements include visual (sight), audio (hearing), and tactile; Interactivity is one of the most important elements in VR because VR simulates the sensations of the real world for its users, and if the simulated virtual world is rigid. There is no interaction. The feeling produced is not optimal.

Yang, Lai, Fan & Mo (2021) investigated the impact of a 360 virtual tour on the reduction of psychological stress caused by Covid-19, and the results showed that the sense of presence had the most significant direct influence on satisfaction with the 360◦ virtual tour experience (immediate effect = 0.289). However, telepresence showed the greatest total satisfaction with the 360◦ virtual tour experience (total effect = 0.452). This implies that the destination attraction displayed in 360◦ VR creates a sense of presence that gives the first impression to conclude satisfaction. This impression is directly created from the attributes of the destination attraction, so it has the most substantial direct effect in satisfying 360◦ VR. Telepresence is the technical aspect of attendance; High telepresence can be created by embedding rich 360◦ videos.

Research conducted by Huang (2011) related to Virtual Tourism: Identifying The Factors That Affect A Tourist's Experience and Behavioral Intentions in A 3D Virtual World found that the technology acceptance factors of existence, perceived usefulness, and perceived ease of use as described by the Technology Acceptance Model are significant factors associated with virtual travel experiences and behavioral intentions. In addition, the results obtained show that psychological needs for autonomy, competence, and relatedness, as determined by Self Determination Theory, are significantly related to virtual travel experiences and behavioral intentions. The results of this study indicate that in designing virtual destinations, tourism practitioners need to consider consumers' psychological needs for competence, autonomy, and relatedness; for

example, the activities provided in Second Life Maasai Mara, such as riding animated animals and listening to Maasai music increase the virtual tourist's autonomy. In addition, tourism marketers should consider the type of information provided and the media used to present the data, including video and music, for example, to enhance perceptions of ease of use and usability.

Several other previous studies have been conducted with a focus on the Technology Acceptance Model (TAM), including research that studies consumer perceptions of mobile banking based on TAM, Theory of Planned Behavior (TPB), and Mobile-TAM (Berraies, Ben Yahia, & Hannachi, 2017; Ward, Raue, Lee, Ambrosio, & Coughlin, 2017; Ooi & Tan, 2016). In addition, research by Tan and Lau (2016) to analyze consumer behavioral intentions to adopt mobile payments uses the Unified Theory of Acceptance and Use of Technology (UTAUT) as a research variable. Ramos-de-Luna, Montoro-Ríos, and Liébana-Cabanillas (2015) analyzed user intentions to use Near Field Communication (NFC) technology with TAM analysis.

Even though VR technology in the tourism industry has emerged since the 2009s, its role is still limited to being a tourism promotion medium. The current condition of the Covid-19 pandemic is forcing tourism actors to rearrange strategies for using VR technology so that they can temporarily substitute and meet the needs of the community in traveling through virtual tourism. However, studies related to public perception and acceptance of alternative travel through this technology have not been widely carried out. This is the basis for the formulation of the following research questions: what is the perception and acceptance of the Indonesian people towards virtual tourism? This research aims to analyze the perception and acceptance of the Indonesian people towards virtual tourism.

Virtual Reality (VR) technology has been used as a promotional medium in the tourism industry, promoting lodging, tourist attractions, and tourist destinations since 2009 (Ozman, Wahab & Ismail, 2009; Huang, 2011; Abdillah, Noor & Suryana, 2017). Indonesia has been using VR technology as a tourism promotion strategy since 2015 at the world's largest tourism exhibition, World Travel Market (WTM), held annually in London. Indonesia displays the beauty of Indonesian destinations in full through VR technology equipped with various 360-degree videos in a short duration of time (Abdillah, Noor & Suryana, 2017).

Although it has emerged since the 2009s, the role of VR is still limited to being a medium for tourism promotion. The condition of the Covid-19 pandemic has forced tourism actors to rearrange strategies for using VR technology to substitute and meet the community's needs in traveling temporarily. VR is currently being used by tourist destination managers and other tourism product providers as an alternative to travel in virtual tourism. Several tourism destinations have offered virtual tours by utilizing VR technology during this Covid-19 pandemic.

Virtual tourism is a simulation activity of a real destination on the screen. Virtual tourism is a technology that puts the user on the screen and allows the user to increase situational awareness, visibility, capture power, and significantly analyze virtual data (Osman, Wahab & Ismail, 2009). Virtual tours are also known as panoramic tours, which simulate a location consisting of a series of images combined into one to produce a 360-degree panoramic photo. The virtual tour provider can use devices such as laptops or PCs to display 360-degree photos. The presentation of this virtual tour can use images or videos as well as 3D models. The purpose of this virtual tour is to provide the

experience of "before being" somewhere by just looking at the monitor screen (Wulur, Sentinuwo & Sugiarso, 2015; Widiastini, Prayudi, Rahmawati & Dantes, 2020).

Cordente-Rodriguez, Mondejar-Jimenez, and Talaya (2012) state that three main factors, namely heavily influence consumer behavior

1. External or environmental factors; among others, economic, demographic, environmental, cultural, and social characteristics.
2. Internal or personal factors; This factor is the basic structure of perception, where we can find motivation, perception, learning, personality, and attitude.
3. Marketing factors, including image creation, creating consumer loyalty, public relations, and positioning products and services to make them more prominent.

The opinion states that one of the factors that influence consumer behavior, or tourists, is internal or personal factors, which are the basic structure of perception, which includes motivation, perception, learning, personality, and attitude. Swarbrooke and Horner (1999) define perception as a subjective interpretation by individuals of their data. The result is a particular opinion of products, places, and organizations and attitudes towards products, places, and organizations. Meanwhile, according to Reisinger and Turner (2003 in Barnes, 2015), perception is a process by which an individual selects, organizes, and interprets stimuli into a meaningful and coherent picture of the world (Reisinger and Turner, 2003). Reisinger and Turner relate the use of the word perception to the definition of Schiffman and Kanuk (1987 in Barnes, 2015) as a source of consumer behavior in a broader context than specifically for the study of the tourism and hospitality industry. Understanding these perceptions is associated with several sources, namely from Samovar and Porter (1991), who review perceptions from a cultural perspective involving language, religion, food, and more (Reisinger and Turner, 2003). According to Samovar and Porter (1991), perception is how stimuli are selected from the external environment and interpreted into meaningful internal experiences. According to Mitchell (1978 in Barnes, 2015), this is in line with the definition of perception. Namely, perception is defined as the process that shapes and produces what we experience. So perception is a process of selecting, organizing, and interpreting data or stimuli of an individual subjectively to become a meaningful and coherent picture of the world and become a significant internal experience that the individual experiences.

Suppose someone perceives that the result of behavior is positive. In that case, that person will have a positive attitude towards the behavior, and vice versa can also be stated that if a behavior is perceived as unfavorable, then the person will have a negative attitude towards the behavior. Thus, if other relevant people perceive that displaying the behavior is something positive, then that person will be motivated to meet the expectations of other relevant people (Ajzen, 1991). Thus, perception in this study represents a critical factor that must be considered.

Changes that occur in tourism that ultimately affect tourist behavior and even drastic changes in the way tourism is marketed, sold, and bought have prompted an increase in various studies to understand the decision-making process by tourists (Blichfeldt & Kessler, 2009). There is a shift in tourism and tourist behavior from "old tourism," namely mass tourism in the 70s and 80s, which were dominated mainly by economic factors, then shifted with increasing demand for individually designed holidays, so that

"new tourism" can be described as tourism that flexible, segmented, specialized and diagonally integrated (Poon, 1993). Cordente Rodriguez, Mondejar-Jimenez, and Talaya (2012) stated that the characteristics of tourists today have changed from the previous characteristics. Consumer behavior will always vary, depending on perceptions, motivations, and circumstances around them. Furthermore, Swarbrooke and Horner (2007) argue that tourism products have differences from other "conventional" consumer goods, namely the difficulty of measuring tourism product purchasing decisions and the constantly changing purchasing decisions so that behavior patterns during purchases will continuously change and are not fixed so that every opportunity purchase will show a different approach. In addition, the very high level of emotional involvement and influence of other people around them is a characteristic of purchasing tourism products which add to the difficulty of researching it because the people who influence decisions will also change their views from time to time (Swarbrooke & Horner, 2007).

Currently, consumers prioritize getting the maximum value for the money they spend. In addition, the values that consumers, including tourists, believe are starting to shift. For example, the current level of interest in quality issues, flexibility, awareness of the environment and culture, and individualism is getting higher. Willingness to Pay (WTP) is a user's willingness to pay an imbalance, in this case, money, for the services he receives. WTP is the highest price that a consumer is willing to pay to get a benefit in goods or services and is a measure of how many potential consumers value the goods or services. WTP is important for all businesses because consumers' willingness to pay the highest price or premium can lead to higher profitability and sustainable competitive advantage for the organization (Konuk, 2019).

Virtual tourism is a new product in tourism that is currently in the product life cycle in an initial position. Therefore, an understanding of the willingness to pay from the community is needed so that tourism product providers and tourist destination managers can develop appropriate strategies regarding virtual tourism.

Methods

This study aims to explore the development of virtual tourism in the various research literature and public perceptions of tourists in accepting and utilizing virtual tourism offered by various tourist destinations or tourism service providers in Indonesia. The research design used was exploratory descriptive qualitative, and quantitative research. This study will analyze and present the data system to be more easily understood and concluded. Meanwhile, this research aims to find something new in grouping specific symptoms, facts, and phenomena from an exploratory point of view. So this experimental, descriptive research is not intended to test particular hypotheses but aims to describe the state of a phenomenon that describes the data, facts, and trends that occur, then analyzed and recommended what should be done to achieve a situation (Arikunto, 2006).

The data needed in this study are primary and secondary. Preliminary data obtained directly from the first hand associated with the variables used in the study. For example, interviews, focus group discussions, and respondents filling out questionnaires (Sekaran & Bougie, 2013). Questionnaires obtained primary data in this study on public perceptions of virtual tourism. At the same time, secondary data is data collected from existing sources, such as company reports, government publications, literature related

to research, and so on (Sekaran & Bougie, 2013). The second type of data taken in this study is secondary data, namely data from literature reviews, documentation, previous research reports, and articles in the media related to this research. The method used in collecting secondary data in this study is a systematic literature review.

Data Collection

The data collection method to answer the second research question is a survey method using an online questionnaire. Items of questions or statements that are indicators of certain perceptions are included in the measuring instrument, which will then be responded to by the individuals whose perceptions will be measured. The measurement instrument is a questionnaire with a Likert scale of $1 - 4$, ranging from 1: Strongly Disagree, 2: Disagree, 3: Agree, 4: Strongly Agree. Measurement instruments (questionnaires) that have been compiled will be distributed to respondents, and the results will be tested. The research instrument is composed of research variables that are operationalized into several questions.

The population in this study is the Indonesian people. Meanwhile, for sampling in this study using the Non-Probability Sampling technique, which is a technique that does not provide equal opportunities/opportunities for each element or member of the population to be selected as samples (Sugiyono, 2015). The purposive sampling technique used in this study was purposive sampling and convenience sampling. The purposive sampling technique determines respondents based on certain criteria or considerations (Sugiyono, 2017) and convenience sampling, namely samples that are easily accessible to population members (Sekaran, 1999). The use of the purposive sampling technique, because there are considerations, must be met by the sample used in this study, namely at least 17 years old and an Indonesian citizen. Meanwhile, another Non-Probability Sampling technique used in this study is the convenience sampling technique, which is based on the spontaneity factor, which means that anyone who accidentally meets the researcher and meets the respondent's requirements can be used as a sample.

The total population in this study refers to the total population of Indonesia in September 2020, as many as 270.20 million people (Prakoso, 2021). To determine the number of samples in this study using the Slovin formula, which is as follows:

$$n=N/(1+Ne^2)$$
$$n: \text{Number of Samples}$$
$$N: \text{Total Population}$$
$$e: \text{Fault tolerance limit (error tolerance)}$$

Calculations using a formula with a tolerance limit of 10% resulted in the number of samples as follows:

$$n = 270{,}000{,}000/(1+270{,}000{,}000 〚(0.05)〛^2)=99.75$$

Based on the calculations above, it can be seen that the number of samples is 99.75, and in this study, the number of samples was rounded up to 100.

Data analysis method

The method of data analysis for research purposes will be carried out with descriptive statistical analysis methods. The data that has been collected will be organized,

compiled, and presented in a clear and good form and presented in two ways, namely by tables and diagrams or pictures. The diagrams commonly used are line charts, pie charts, and scatter charts. The grouping of data will be carried out with the aim that the important characteristics of the data are.

Result And Discussion

This research is a descriptive quantitative study to explore the perception and acceptance of virtual tours or virtual tours by the public. Data collection in this study used a non-probability sampling technique, namely convenience sampling by distributing online questionnaires to respondents. The number of samples is 99.75 and rounded to 100, and in this study, 157 respondents were collected.

Based on gender, the majority were women, 61.1%, and men were 38.9%, with the most respondents being in the age range of 15-19 years, which was 34.9% and followed by the age range of 20-24 years, namely 28.66%. This is also in line with the monthly income of respondents. As many as 51.6% have an income of less than 1 million and are in the range of 1 to 1.7 million. This is in line with the characteristics of the respondents, most of whom are students with the assumption that they do not have income from work but from pocket money.

Quite many respondents know about virtual tours, as many as 72.6% and social media such as Facebook, Instagram and TikTok, and YouTube are the most common media for getting information about virtual tours.

Respondents who get information from friends or colleagues as much as 26.1% show that word of mouth and e-wom (promotional tools) are still quite significant for disseminating information. In terms of participation, almost all respondents (92.4%) had never taken a virtual tour before the pandemic. Still, the number was later reduced, or in other words, 41.4% then took a virtual tour during the pandemic. Respondents' impression of virtual tours was 23.6% said virtual tours were exciting, and 39.5 said virtual tours were fascinating. A total of 63,7% needed virtual time as an alternative.

In terms of willingness to pay, they are divided into three major groups, namely those willing to pay to take part in a virtual tour for 1.5 hours per session under Rp. 10,000, - as much as 25.5% and those who are willing to pay between Rp. 10,000, - to Rp. 50. .000,- as much as 36.3% and the remaining 30% are not willing to pay.

Of all respondents, as many as 44% think that virtual tours cannot replace physical tourism, as many as 20.4% answer neutral or cannot decide. As many as 35% of respondents state that virtual tours can replace physical tourism. However, if virtual tours are seen as an alternative, then 63% think that virtual tours can be an alternative to physical tourism. Most respondents think virtual tours cannot replace physical tourism but are considered an alternative (not a substitute) for physical tourism. As many as 32.5% of respondents do not consider virtual tours to help replace physical travel, and they still want physical tours. 22.3% answered neutral, and 45.2% thought virtual tours helped them in replacing physical tours. It can be assumed that they tried the virtual tour and were satisfied, or indeed they have other reasons not to do physical tourism such as having physical limitations or health or others, and this can be investigated further.

Conclusion

This research is a descriptive quantitative study to explore the perception and accep-

tance of virtual tours or virtual tours by the public. Data collection in this study used a non-probability sampling technique, namely convenience sampling by distributing online questionnaires to respondents. The number of samples was 99.75 and rounded to 100, and in this study, 157 respondents were collected. The conclusion drawn from this research is that quite many respondents know that virtual tours with social media (Instagram, TikTok, Facebook) and youtube are the biggest media in disseminating information about virtual tours. However, respondents who have participated are still below 50% and in terms of willingness to pay: divided into three groups and the maximum they want to pay is IDR 50,000 per 1.5 hours per session. In addition, virtual tours cannot replace physical tours and are considered only as an alternative. Virtual tours are not enough to help respondents get the same experience as on physical tours. This can also be caused because the technology used may not yet use virtual reality. In terms of interest and intention to take virtual tours both during the pandemic and after the pandemic is still low. In addition, the intention to recommend to family and friends is still low.

Recommendation

The results of this study cannot be generalized, so it is necessary to conduct more in-depth research and involve more respondents to represent all Indonesian people. Future research may be able to focus on virtual tours that use virtual reality because the technology can present a different sensation than just a normal virtual tour or 360° Virtual tours still have great potential to be developed as a tourism promotion tool. However, because public acceptance of virtual tours is still low, if destinations want to create virtual tours as products, they need to develop virtual tours to make them more interesting or unique. They can be started by conducting studies with tourist preferences for virtual tours.

References

Abdillah, Noor & Suryana. (2017). Teknologi Virtual Reality Mendukung Promosi Perjalanan Insentif Di Travelab Politeknik Negeri Bandung. *Ekonomi Bisnis*, Vol.4, No.1. DOI: http://dx.doi.org/10.35590/jeb.v4i1.733

Ajzen, I. (1991). *The Theory of Planned Behavior*. Organizational Behavior and Human Decision Processes, 50, 179-211. DOI: https://doi.org/10.1016/0749-5978(91)90020-T

Arikunto, S. (2006). *Prosedur Peneltian Suatu Pendekatan Praktik*. Jakarta: PT Rineka Cipta, 2006, h. 7. ISBN: 978-979-518-998-5

Bafadhal, A.S., & Hendrawan, M.R. (2018) *Exploring the Immersion and Telepresence in Gamified Virtual Tourism Experience toward Tourist's Behavior*. DOI: https://doi.org/10.2991/aicobpa-18.2019.12

Barnes, J. (2015). Perception in Tourism & Hospitality. *AU-GSB E-Journal*, 8(2).

Blichfeldt, B. S., & Kessler, I. (2009). *Handbook of Tourist Behavior: Theory & Practice*, M. Kozak & A. Decrop (Eds). New York: Routledge.

Davis, F.D. (1989). Perceived Usefulness, Perceived Easy Of Use And User Acceptance Of Information Technology. *MIS Quarterly*, Vol. 13. No. 3, hh. 318-39.

Fishbein, M., & Ajzen, I., (1975). Belief, Attitude, Intention and Behavior: an Introduction to Theory And Research. Reading, MA: Addison-Wesley.Cordente-Rodriguez, M., Mondejar-Jimenez, J.A., & Talaya, A.E. (2012). Challenges for Tourism - A Changing Paradigm. *International Business and Economics Research Journal*, 11(13), 1483 – 1493

Huang, Y. (2011). Virtual Tourism: Identifying The Factors That Affect A Tourist's Experience And Behavioral Intentions In A 3d Virtual World. All Dissertations. 775. https://tigerprints.clemson.edu/all_dissertations/775

Karunia, A.M. (2020). Kemenparekraf Perkirakan Jumlah Wisatawan Tahun Ini Maksimal 4 Juta Orang, https://money.kompas.com/read/2020/08/07/204729626/kemenparekraf-perkirakan-jumlah-wisatawan-tahun-ini-maksimal-4-juta-orang

Konuk, F. A. (2019). Consumers' willingness to buy and willingness to pay for fair trade food: The influence of consciousness for fair consumption, environmental concern, trust and innovativeness. *Food Research International,* 120, 141–147. DOI: 10.1016/j.foodres.2019.02.018

Kwok, A.O. J., & Koh, S.G.M. (2020) COVID-19 and Extended Reality (XR). *Current Issues in Tourism*. DOI: https://doi.org/10.1080/13683500.2020.1798896

Osman, A., Wahab, N.A., Ismail, M.H. (2009). Development and Evaluation of an Interactive 360° Virtual tour for Tourist Destination, *Journal of Information Technology Impact*, Vol. 9, No. 3, pp. 173- 182, 2009.

Poon, A. (1993). *Tourism, Technology and Competitive Strategies*, Wallingford: CABI International.

Prakoso, J.P. (2021). Berapa Jumlah Penduduk Indonesia? Ini Rincian Hasil Sensus 2020, https://kabar24.bisnis.com/read/20210121/15/1346099/berapa-jumlah-penduduk-indonesia-ini-rincian-hasil-sensus-2020.

Sekaran, U., & Bougie, R. (2013). *Research Methods for Business: A Skill Building Approach (6th ed.)*. New York: John Wiley & Sons, Inc.Petticrew dan Roberts, 2006

Sukoco, Suparman, Hermanto dan Rivani. (2021). The Role of Virtual Reality as a Promotion Tool to Increase Travel Interest during the Covid-19 Pandemic: A Phenomenological Approach of Tourist Objects in Jakarta. *Technium Social Sciences Journal, Technium Science,* vol. 16(1), pages 493-502, February

Swarbrooke, J., & Horner, S. (1999). *Consumer Behavior in Tourism. (1st ed.)*. Oxford/Burlington. UK: Butterworth-Heinemann

Swarbrooke, J., & Horner, S. (2007). *Consumer Behavior in Tourism.* Oxford/Burlington, UK: Butterworth-Heinemann.

Tiusanen, P. (2017). Virtual reality in destination marketing. Master Thesis Degree Prograam in Tourism. Haaga-Halia. University of Applied Sciences.

Tölkes, C. (2018). Sustainability Communication in Tourism – A Literature Review. *Tourism Management Perspective*, 27, 10-21. DOI:10.1016/j.tmp.2018.04.002

Turban, E. (2005), *Decision Support Systems and Intelligent System*, Edisi Bahasa Indonesia, jilid 1, Penerbit Andi. Yogyakarta.

Wulur, H.W., Sentinuwo, S., Sugiarso, B. (2015). Aplikasi Virtual tour Tempat Wisata Alam di Sulawesi Utara. *E-journal Teknik Informatik*, Vol. 6, No. 1, ISSN : 2301-8364 1.

Yang, Lai, Fan & Mo (2021). The impact of a 360◦ virtual tour on the reduction of psychological stress caused by COVID-19. *Technol Soc*. DOI: 10.1016/j.techsoc.2020.101514

Yung, R., Khoo-Lattimore, C. (2019) New Realities: A Systematic Literature Review on Virtual Reality and Augmented Reality in Tourism Research. *Current Issues in Tourism.* 22. 1-26. DOI: 10.1080/13683500.2017.1417359.