

INNOVATION ON 360° VIDEO APPLICATION AS A NEW NORM IN DEVELOPING HISTORICAL TOURISM AND ITS ACCEPTANCE AMONG VIEWERS: THE CASE OF MALAYSIA NATIONAL MUSEUM

Wardatul Hayat Adnan¹ & Mahathir Yahaya^{2*}

¹School of Communication and Media Studies, College of Computing, Informatics & Media, Universiti Teknologi MARA, 40000 UiTM Shah Alam, Selangor, Malaysia

²School of Social Sciences, Universiti Sains Malaysia, 11800 USM Gelugor, Penang, Malaysia

ARTICLE INFO

Keywords:

Innovation,
360° video,
historical tourism,
planning,
development

ABSTRACT

Lack of maximising the technology in today's tourism ways of doing things is the main concern of one development and success in tourism sectors. Previous studies have proven the success rate of using the current innovation and trends in tourism sector help to increase in terms of the visibility of the tourist attractions and numbers of visitors in one tourist location. Hence, in the present study, it focuses on National Museum planning in its initiative to adopt new technology for the betterment of Malaysia National Museum popularity. Museum is a must visit location of one country as it acts to introduce ways of live and culture of its people. Yet, many of local and international visitors tend to neglect the importance of visiting museums. This is due to the portrayal of physical static museum leads towards unattractive environment and not aware of the high potential in understanding historical background of the place that they visited. Recent years, the numbers of people visiting national museum in Malaysia specifically are reducing. It is impacted due to the present movement order control since March 2020. The limitation of physical visitation to a tourist spot such as national museum has worsen the situation. Therefore, the present study aims to explore the use and application of 360° view technology in Malaysia National Museum. The present study collected images and 360° videos using device namely Insta360 ONE R Twin Edition. Once completed, questionnaire was distributed to collect 50 viewers use and satisfaction on the onsite national museum videos and images output. Results explained that viewers agreed and enjoy using the 360° video to explore the museum virtually. Furthermore, it also assisted visitor to expect what they will see and go for future visit as results shows the viewer acceptance and intention to use the 360° video is positively significant.

1. INTRODUCTION

Innovation on 360° view application, is the current trend of visual documentation in portraying one location view without physically be at the location. This allows an access to the viewer to experience the view of 360° VR to give the feel of the environment experience digitally. This helps the user to do advance research before physical visitation at on any tourist spot listed. The visibility assists in terms of preparing the visitor on what to expect at the location to prevent loses or disappointments among them. Previous study shown on how 360° view helps in promoting its tourism products. Many of the studies conducted are relating to developed countries such as Japan,

United States of America, and many European countries (Pasanen et al., 2019); Kelling, Väättäjä, & Kauhanen, 2017; Corbillon, De Simone, & Simon, 2017). Yet, the usage and application in developing countries such as Malaysia are still low. The challenges of adopting this new norm have been increasing recently due to the situation of pandemic Covid-19 that break in Malaysia early 2020. Due to this, many sectors including tourism industries are impacted. Scholars started to conduct much research in terms of how to continuously make the industries relevant and competitive during the pandemic eras.

*Corresponding author: mahathiryahaya@usm.my

Physical visits were halted, and state-to-state border crossing was prohibited. Not only are overseas travels prohibited, but there are also stringent controls in place to prevent the epidemic from spreading. Due to the large number of new instances of covid-19, MKN issues a severe mobility control order in the Klang Valley. One of the tourism items that has been harmed is National Museums (MOTAC, 2021). Struggles reach this unit to ensure visibility and visitor numbers, as it is also not a popular tourist product among visitors, as museums are often associated with being unattractive. As a result, it is predicted that the national museum would adapt its digital marketing strategy in line with other museums around the world that have adopted digital marketing strategies such as virtual reality and 360-degree view applications. National Museum is expected to become one of Malaysia's most popular tourism goods as a result of this technological adaptation and a combination of Search Engine Optimization (SEO).

The application applied on the present innovation is on 360° media. It is consisting of 360° videos and images, developing the application will help the Malaysia National Museum to enhance traditional applications with immersive content. This will later be used by the tourism agency in promoting national museum as tourism products in visiting Malaysia. The embedded of 360° video into a travel application will provide viewers tour as they plan an actual vacation. It helps the prospective tourists on a virtual walkthrough of their upcoming vacation. Hence, the use of this application will be beneficial for tourism marketing (Adachi, Cramer, & Song, 2020). Although 360° media support true stereoscopic Virtual Reality (VR) playback through compatibility with VR platforms like Google Cardboard, it can also be displayed in a simple "magic window" that can be viewed from desktop browsers and mobile apps without any special VR hardware. Therefore, it is much accessible to public without the VR hardware availability. Therefore, the present study aims to satisfy below objectives: -

Research Objective 1:

To explore perception on usage of 360° view application using Insta360 ONE R Twin Edition - 4K Wide Angle Mod on Malaysia National Museum.

Research Objective 2:

To apply 360° visual documentations using Insta360 ONE R Twin Edition - 4K Wide Angle Mod on Malaysia National Museum.

Research Objective 3:

To identify the acceptance and use of 360° visual documentations using Insta360 ONE R Twin Edition - 4K Wide Angle Mod towards Malaysia National Museum visitors.

The next section of the present paper described further on the related literature of the present study to further understands the important usage of 360° view application using Insta360 ONE R Twin Edition (4K Wide Angle Mod) on Malaysia National Museum as one of the tourism products. It also discussed the implications of the application in tourism industry in Malaysia.

2. LITERATURE REVIEW

2.1 Historical Tourism

Chaigassem and Tunming, (2019) research on the Heritage and Historical tourism in Thailand that offers visitors opportunities to learn about the local culture at authentic sites with respect to the Ecosystem Services, local culture, and wisdom. In order to promote the sustainability of the tourism sites and to foster a sense of protectiveness and ownership among people in the community, these sites are usually managed by the locals, which has been one of many ways to healthily run tourism businesses, facilitate local economies, and to fairly distribute revenues (Ministry of Tourism & Sports, 2017). Thailand famous historical tourism at Khao Phra Wihan national park in Sisaket province is one of the examples which publish the tourism images and bring greater understanding and awareness of the historical site as a universal cultural heritage. Moreover, tourism innovative management can also be used to promote the tourism and the learning in tourist destination. It is the art of communication and presentation that stimulates the interest of tourists to make them understand the value and the importance of tourist destination. Due to this reason, the digital medium will help in assisting the communication digitally to create and stimulate people understanding before its physical visit to any historical sites.

1.2 Malaysia National Museum

The Malaysia of National Museum was first initiated by the First Prime Minister of Malaysia Yang Teramat Mulia Tunku Abdul Rahman Putra Al-Haj. During World War II, it was accidentally bombed by the Allied Forces on 10th March 1945. The traditional Malay house and Malay motifs was used on the architecture of the museum to portray the history and crafts of Malaysia. At present, the museum is administered by the Department of Museum Malaysia (Muzium Negara, 2021).

Exhibitions available are inclusive (1) Prehistory Gallery (2) Malay Kingdoms Gallery, (3) Colonial Era Gallery, and (4) Malaysia Today, the extensive galleries give the ideas to the visitors in understanding the uniqueness of Malaysia through its history. The intentions of giving ideas to the visitors to increase the belongingness, warm and welcome in Malaysia. Malaysia National Museum has taken their initiatives in digitalising the materials available including the exhibition conducted by museum. This inclusive on their recent exhibition such as "Kuasa Emas" or The Power of Gold which has been digitalised as in 360° videos. The initiative was hoped to attract more people to witness themselves on the available exhibit. Therefore, aggressive steps taken by Malaysia Museums Management in ensuring the visibility of Malaysian treasure grasp by the new generations.

1.3 The use of 360° videos in Tourism Industry

Study conducted in tourism education using 360° video was tested and found that there is an improvement in terms of user's experience and satisfaction through the application (Arrasyid et al., 2020). Items collected in documenting the visuals are (1) Photos 360°

camera (Normal) (2) 360° camera-based learning videos (New Normal). According to Rahimzhan, Ozturen and Ilkan, (2020), whose conducted studies on the application of 360° videos in Hong Kong tourism has proven significant impact between 360° video and viewers' attitudes and behavioural intentions to visit the tourist spots. Since 2018, there are about 5,900 studies found relating to historical tourism and 360° videos used in promoting the location. However, about 2500 studies are relating to Malaysia tourism, this is to show the positive development and commitment of the country towards digitalisation in promoting its tourism products. Developed countries has left us far behind as they have already used the technology earlier then developing countries such as Malaysia.

Table 1: Sample of studies relating the usage of 360° videos and Tourism Spots

No	Year Published	Topics Relating to 360° view videos and Tourism Spots	References
1	2017	Impact of device, context of use, and content on viewing experience of 360-degree tourism video	Kelling, Vääätäjä, & Kauhanen, 2017
2	2018	Comparing virtual reality tourism to real-life experience: Effects of presence and engagement on attitude and enjoyment	Wagler, & Hanus, 2018
3	2019	Comparing Tablet and Virtual Reality Glasses for Watching Nature Tourism Videos	Pasanen, Pesonen, Murphy, Heinonen, & Mikkonen, 2019
4	2020	Using virtual reality for tourism marketing: A mediating role of self-presence	Adachi, Cramer & Song, 2020
5	2020	Emerging realm of 360-degree technology to promote tourism destination	Rahimzhan, Ozturen, & Ilkan, 2020
6	2021	The effectiveness of virtual vs real-life marine tourism experiences in encouraging conservation behaviour.	Hofman, Hughes & Walters, 2021

Therefore, 360° video application is expected to be beneficial tool in shaping consumer attitudes, behavioural involvement, and intentions towards visiting the tourist spots in Malaysia specifically the National Museum of Malaysia. Further review has been done to list of studies conducted relating to 360° video used in tourism sector as per Table 1. Topics relating to the present studies reviewed from 2017 – 2021. It shows the relevancy of the study conducted are to date

and on demand. In addition, the increase numbers of studies on 360° video used conducted by researchers has represents demand and usage of the 360° video. Many of the studies conducted from many of the countries, including Malaysia in promoting tourism. Studies on the use of 360° view videos in tourism sectors increases about 73%. Whilst recent studies relating to this topic updated until March 2021 showing continuous study with 434 studies.

Table 2: Sample of studies relating the usage of 3600 view videos and Tourism Spots

No	Year of study conducted	Total Studies
1	2017	2,870
2	2018	3,090
3	2019	3,450
4	2020	3,940
5	2021 – March 2021	434

1.4 360° view Videos with Insta360 ONE R Twin Edition (4K Wide Angle Mod) Features

Insta360 ONE R has more than 10 features. It helps users enjoying 360° view Videos that allows shots taken from drone with simple steps. Insta360 brings a new innovation in developing 360° Videos that allows users to maximise the output results, by whether static or moving images. Features available are as follows: -

- 1) Super 5.7K 360° Capture
- 2) 4K Wide Angle
- 3) FlowState Stabilization
- 4) Waterproof to 5m
- 5) Invisible Selfie Stick
- 6) Auto Frame
- 7) Hyperlapse
- 8) Point to Track
- 9) Voice Control
- 10) Slow Motion
- 11) HDR Photo +Video
- 12) Night Shot

1.5 360° view Videos with Insta360 ONE R Twin Edition (4K Wide Angle Mod) Advantages

- a) Gateway to new marketing platform

The new media tools such as Insta360 act as a platform in marketing product and places. Tourism sector specifically change the ways to market one tourism sector to applied with the new platform such as 360-degree videos. Sample of tourism spot in promoting countries best place to visit using the application such as U.S National Parks Virtual and Museum of Fine Arts in Vienna – Austria 360°. AirPano.com is a website consist of world virtual tour with many tourism spots such as Saint Petersburg, Russia, Sharks feeding in Bahamas and Victoria Falls in Africa.

Unlimited possibilities for viewers

The new technology introduces using Insta 360^o provide a new possibility for viewers to reach the impossible views that traditional camera able to perform. Extreme activities such as surfing, cycling, hiking, or canoeing were easily be captured and at the same time, the coverage of environment view is also now able to be captured in just a video.

b) Customer loyalty

The immersive videos captured led users or viewers to continuously surfing and viewing the video. Studies shows viewers tend to attach at longer time when viewing 360^o videos compared to static images (Xu, Dong, Wu, Sun, Shi, Yu & Gao, 2018). It attracts more attention among viewers to know and view more on through 360^o videos (Sheikh, Brown, Watson & Evans, 2016).

c) 360^o Media Advertising

According to Rahimizhian, Ozturen & Ilkan (2020), the use of 360^o videos in marketing plans allows destination marketers to give their customers a virtual adventure before their actual trip. This shown wider usage among advertisers in attracting more tourist specifically in promoting tourist spot.

1.6 360^o view Videos with Insta360 ONE R Twin Edition (4K Wide Angle Mod) Disadvantages

a) Technical limitations

It does not allow to frame the action to hide a less-than-ideal environment or set. It also difficult to hide cuts in videos developed. During the shoot, user will not be able to zoom in and out. There are work-around (i.e. volumetric capture paired with positional tracking) and it works better with camera rig still. If movement needed it must be motivated for intake while driving in a car to prevent sickness amongst the viewers. The camera rigs that are currently on the market perform poorly in low lights too. Objects need to remain a minimum distance of 3 feet from the camera to avoid warping. Additionally, any objects further than 20 feet away from the camera lose their stereoscopic depth.

b) Pricing

Because they require 360-degree set dressing and a labour-intensive editing process (for stitching, specifically), professional 360 videos can be expensive to produce

1.7 360^o view Videos with Insta360 ONE R Twin Edition Acceptance and Use (Technology Acceptance Model)

Technology Acceptance Model (TAM) was used in the present study to test the acceptance and use of 360-degree video developed specifically for National Museum. There are 4 variables adapted from TAM namely (1) Perceived Usefulness, (2) Perceived Ease

of Use, (3) Perceived Enjoyment and (4) Behavioural Intention to use the 360-degree video (5) Actual Use of 360-degree video. This was supported by previous study that represents TAM used in identifying of the acceptance and use of the new technology of consumer-generated media usage for travel decision-making, perceived usefulness was positively connected to visitors' intention, and mobile social tourism shopping intention.

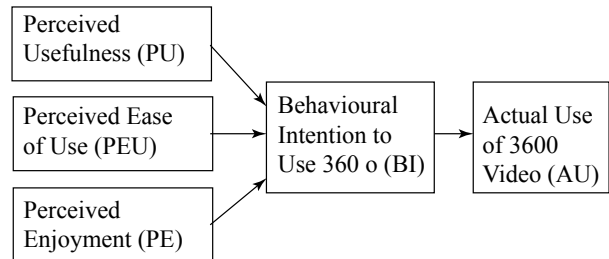


Figure 1: Model of Acceptance and Use 360^o video in Malaysia National Museum Adapted from Davis, 1989; Venkatesh, 2003

Perceived usefulness and ease of use was classified as principal representatives of extrinsic motivators of one technology acceptance (Davis, 1989) perceived enjoyment also related to intrinsic motivation that will lead to continuance intention to use technology specifically in the present study which is 360^o video and indirectly lead user to use the video (Venkatesh, 2003). Hypothesis of the present research developed are as below: -

- H1: There's a significant difference between Perceived Usefulness towards Behaviour Intention to Use 360-degree video in Malaysia National Museum.
- H2: There's a significant difference between Perceived Ease of Use towards Behaviour Intention to Use 360-degree video in Malaysia National Museum.
- H3: There's a significant difference between Perceived Enjoyment towards Behaviour Intention to Use 360-degree video in Malaysia National Museum.
- H4: There's a significant difference between Behaviour Intention to Use 360^o video towards Actual Use of the video in Malaysia National Museum.

To meet objectives of the present studies, data collection conducted through interviews, visual documentations and surveys using adapted model of acceptance and use of 360^o view applications conducted. Details of the process of data collection further explained in the next section.

3. MATERIALS AND METHODS

3.1 Interview

Altogether 6 interviews were covered during July-August 2020. Table 3 summarizes the respondents background involved in the present study. It shows the reported attributes of the interviewees position, as well as the contribution towards the tourism sector relating to national museum. All interviewees were kept anonymous

and no position or organisation name was reported, respecting the requirements of General Data Protection Regulations (GDPR). Interviews has been conducted for about 15 minutes for each session.

Table 3: Summary of Respondents Background (Interview)

No	Respondent	Gender	Interview Location	Interview Duration
1	Museum Officer 1	Male	National Museum Malaysia	15 minutes
2	Museum Officer 2	Female	National Museum Malaysia	15 minutes
3	Museum Officer 3	Female	National Museum Malaysia	15 minutes
4	Visitor 1	Female	Google Meet	15minutes
5	Visitor 2	Male	Google Meet	15 minutes
6	Visitor 3	Male	Google Meet	15 minutes

In order to obtain perception among the users and personnel working in National Museum Malaysia relating to 360° use as tools in promoting tourism product, an interview was conducted. All interviewees will be viewing the 360° video output before questions asked during the session. List of questions ask in each session are as in table 4. Both museum officers and visitors will use the same set of questions and results from the interview will be later compared for both groups.

Table 4: Interview Questions

No	Interview Questions
1	Have you heard new tech tool name 360° videos?
2	Have you use Insta360 ONE R Twin Edition before? If Yes, could you please share the experience of using it?
3	After viewing the 360° videos using Insta360 ONE R Twin. How do you feel towards the output?
4	What is your opinion, if the application of 360° Videos applied on National Museum in Malaysia used in promoting the museum?
5	Do you agree if this application use as a tool to promote tourism product such as our National Museum?

3.2 360° View Application on Malaysia National Museum

In order to give actual experience on 360° application to Malaysia National Museums viewers, the present study will be applying on Insta360 one R – dual lens 360 model camera. The camera offered basic functions and features uses 360 technologies to create traditional flat video, HDR video, time-lapse mode, and bullet time video. Camera allowed to record up to 5.7K resolution and compatible with smartphone to control the camera with the remote-control application provided by camera manufacturer. Moreover, it also has the ability to capture standard photos, HDR photos, Burst, Interval photos, night shot and pure shot with raw photo format. This 360° views technology provides an overall experience and atmosphere of the Malaysia National Museum.

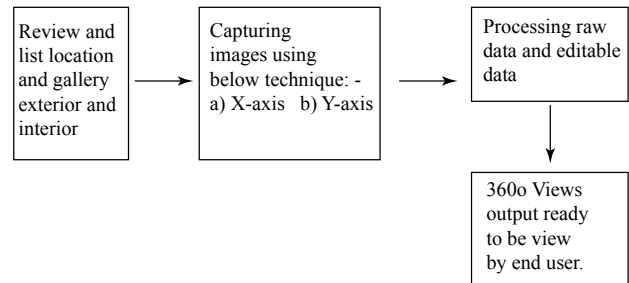


Figure 2: Schematic of an omnidirectional camera with two mirrors

Figure 2 shown the camera can capture images and video from all direction falling onto the focal point, covering a full sphere excluding the top and bottom of the sphere. Data will be collected at the Malaysia National Museum capturing the actual images exterior and the interior of galleries available. Figure 3 shows on the data collection process in recording at the museum using Insta360 ONE R Twin Edition.

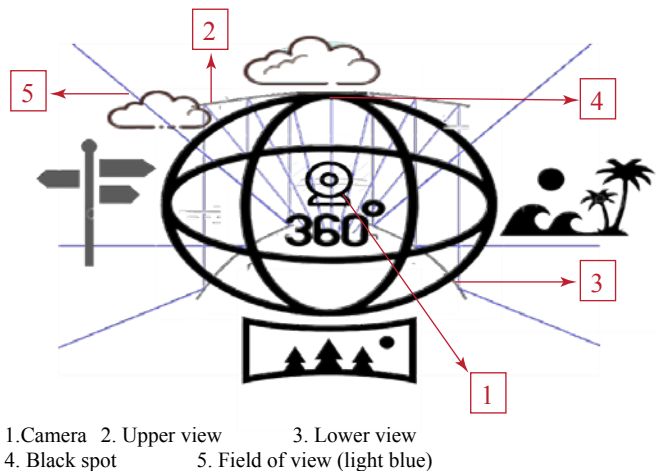


Figure 3: Data Collection Process using 360o Video through Insta360 ONE R Twin Edition

3.3 Qualitative Method – Interview

Few samples were selected consist of museums officers and visitors relating to its level of awareness on the existence of 360° video technology. Interview has been conducted for 15 minutes to each informer to record its understanding relating to the technology and the application of the technology to Malaysia National Museums. There are 5 questions asked and 6 of them has participated, the process stop after obtaining saturated answer from them. In addition, the visual data was also collected on site to record its 360° videos using the X and Y axis techniques.

3.4 Quantitative Method – Cross Sectional Surveys

After the task was completed, the questionnaire was given to users to find out their experience with the 360° video application being tested. It was done to identify what the users see and feel when performing the prearranged task. Convenient sampling was used

in the present study for quick check on the user’s experience. The questionnaire contains of 50 viewers representing the three aspects of acceptance and use of 360° videos in Malaysia National Museum that visited the museum. Sample was collected randomly from 4 January 2021 – 10 January 2021, after the first MCO announced by Malaysia government in National Museum. Low visitor, has cause limited sample that presence at the National Museum.

The questionnaire consists of five question items related to the acceptance and use of 360° technology was used. Each parameter was placed in a set of statement offered to users in the form of a Likert-scale questionnaire. Each item in the questionnaire aims to show the level of usability according to user acceptance which was scored on a 5-point Likert scale through a set of cross-sectional survey.

3.5 Instrumentation

Table 5 & 6 are the instrument use for the present study adapted from El-Gohary (2021). Sections are divided into two section (A & B) that represents demographic and variable in Technology Acceptance Model (TAM) which are Perceive Usefulness, Perceive Ease of Use, Behavioural Intention and Use Behaviour and Perceived Enjoyment (Huang et al., 2016).

Table 5: Section A: Demographic

Items	Items
A.1	Gender
A.2	Age
A.3	Marital Status
A.4	Education
A.5	Occupation
A.6	Income

Table 6: Section B: Technology Acceptance Model (TAM)

No.	Items	References
Perceive Usefulness (PU)		
PU.1	Using 360° video of Malaysia National Museum in advance is useful for my visit.	El-Gohary, 2012
PU.2	Using 360° video of Malaysia National Museum fasten my search for my visit.	
PU.3	Using 360° video of Malaysia National Museum increase my knowledge on what to expect before visiting.	
PU.4	Using 360° video of Malaysia National Museum is helpful as tourist.	
Perceive Ease of Use (PEOU)		
PEOU1	Easy to use and navigate the 360° videos of Malaysia National Museum.	El-Gohary, 2012
PEOU2	Learn to use of 360° video technology would be easy for me to explore artefacts available in the Malaysia National Museum	
PEOU3	It will be easy for me to become resourceful about Malaysia National Museum by using the 360° technology.	
PEOU4	I found that 360° videos are easy to use for my search on Malaysia National Museum.	
Perceived Enjoyment (PE)		

No.	Items	References
PE1	I enjoyed using 360° videos on Malaysia National Museum.	Huang, Backman, & Chang, 2016
PE2	I found it fun using 360° videos on Malaysia National Museum.	
PE3	I feel pleased using 360° videos on Malaysia National Museum.	
PE4	The 360° videos on Malaysia National Museum makes me feel excited & energetic.	
Behavioural Intention (BI)		
BI.1	I intend to use 360° videos before my visit to Malaysia National Museum.	El-Gohary, 2012
BI.2	I intend to use 360° videos to see available artefacts in Malaysia National Museum.	
BI.3	I intend to use 360° videos to see guide me on Malaysia National Museum floor plan arrangements.	
BI.4	I intend to use 360° videos to explore Malaysia National Museum exhibition.	
Actual Use (AU)		
UB.1	I use 360° videos before my visit to Malaysia National Museum	El-Gohary, 2012
UB.2	I use 360° videos to see available artefacts in Malaysia National Museum	
UB.3	I use 360° videos to see guide me on Malaysia National Museum floor plan arrangements.	
UB.4	I use 360° videos to see guide me on Malaysia National Museum floor plan arrangements.	

4. FINDINGS

4.1 Interview Findings

Findings from interview conducted relating to their perception on the usage of 360 videos using Insta360 on Gallery C National Museums. Many of them agrees that the videos are attractive and interactive. It hopes to attract more visitor in visiting our national museum. Therefore, through interview conducted from 6 respondents including museum officers and visitors, findings are concluded in table 5 below, answers given are based on questions available in table 4.

Table 5: Summary of respondent’s interview results

Respondent/ Questions	Age	Q1	Q2	Q3	Q4	Q5
Respondent 1	46	Yes	No	Interesting but the feeling does not the same compared to be physically at museum	I agree on this new application to be adopt in museum, yet only teasers will do. Not for all items, as if all goes digital, it will reduce visitor’s interest to physically experience.	Somehow Agree
Respondent 2	32	Yes	No	Interesting but the feeling does not the same compared to be physically at museum, yet it’s useful to target younger audience.	It will attract younger generations to come and visit museum at time	Agree

Respondent 3	35	Yes	No	Like the features available as videos are readily seen o phone. Users will experience and aware about the artefacts through online. It helps foreign visitors to expect what they will see when visiting museum,	Easier for us to view and get the information without have to come to museum	Agree
Respondent 4	15	Yes	No	The tech is wonderful; I simply love it. I hope that school will also give an exposure to students at school in adopting 360 degree videos.	It will be good for students to understand history better, especially to those who are not staying in Klang Valley. They can still have learnt history interactively from home. It will be good if live chat provided by museums to get live answers from available curators.	Agree
Respondent 5	18	Yes	No	I love to visit museum due to its environment and its history. Yet 360-degree videos are another steps forward as many of the museum in overseas such as in London. They have virtual museums too. Yet, visitors have kept coming to museum as one of their best spot.	It's good initiative if our national museum moves to digitalise museums galleries as this will help users to visit their website frequently to shows interest. As the message to understands country history will still be achieved.	Agree
Respondent 6	18	Yes	No			Agree

Table 5.0 above are summary of interview results conducted to museum officers and visitors. Interviewees age ranging from 15 years old to 46 years old. All of them have heard about the technology called 360-degree videos and gadget called Insta360 but none of them has experience using mentioned tech. After giving an introduction on the idea of 360-degree videos, most of the respondent give positive feedback and many agreed it should be applied to Malaysia national museum as this will be fitting the new norms that demanding technology and digitalisation.

4.2 360- degree Output Captured Using Insta360 ONE R

Gallery C divided into 24 small sections in the National Museum. The output for each section was captured using Y and X axis as per Figure 3 below. Output shown and capture are as per Table 6.

Figure 3: Image captured using X and Y-axis

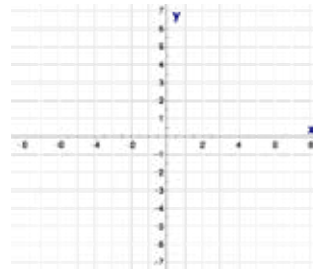


Table 6: Summary of Output sample from Gallery C, Malaysia National museum using Insta360 –Y-axis

No	Section	Y- axis
1	Dutch in Malacca	
2	Johor Sultanate	
3	Weld Quay penang	
4	Perjanjian Pangkor	
5	Japanese Invasion in Malaya & Currency	

Table 7: Summary of Output sample from Gallery C, Malaysia National Museum using Insta360 –X-axis

Main Entrance	Port de Santiago A Famosa	Tin and Orde

4.3 Technology Acceptance Model Survey Results

Objective 3 of the present study aims to identify the acceptance and use of 360° visual documentations using Insta360 ONE R Twin Edition - 4K Wide Angle Mod towards Malaysia National Museum visitors. The questionnaire distributed was tested on its reliability. The Cronbach alpha results for 5 main variables consisting of 1) Perceived Usefulness ($\alpha=0.89$), 2) Perceived Ease of Use ($\alpha=0.85$), 3) Perceived Enjoyment ($\alpha=0.86$), 4) Behavioural Intention to use ($\alpha=0.88$) and 5) Use of Technology ($\alpha=0.89$). This proven on items consistencies for each of the variable in the instrument developed. Survey was distributed among visitors and data collected has been further analysed in SPSS using Pearson Correlation Coefficient (r) analysis testing to inspect on its relationship between variables. The relationship strength has been tabulated in table 8 using Pearson Correlation test. The present study lies between 0.3 - 0.5 which indicate a moderate positive linear relationship between the two-variable tested (Fan, et. al. Therefore, all hypotheses withdrawn earlier are accepted.

Table 8: Summary of Pearson Correlation results on factors contributed towards the use of the 360° Video Application

Hypothesis	Relationship	Pearson Correlation Coefficient r	Sig.	Hypothesis Testing
H1	Perceive Usefulness – Behavioural Intention to use 360° Video Application	0.500	0.000	Accepted
H2	Perceive Ease of Use – Behavioural Intention to use 360° Video Application	0.329	0.000	Accepted
H3	Perceive Enjoyment – Behavioural Intention to use 360° Video Application	0.421	0.000	Accepted
H4	Behavioural Intention - 360° Video Application Use	0.450	0.000	Accepted

5. CONCLUSION & DISCUSSION

In the world of education, various technologies have been applied to the education system. As such, technological revolution has paved the way for the use of new approaches practiced in the teaching and learning process today (Piovet al., 2012). Every technology that exists today has its own implications and the same applies here, as this technology can be used as a support for education as well as improving the quality of student learning. The use of videos emphasising visuals in reality will increase the motivation of school students to understand and explore what is being learnt. The use of these 360° videos has the potential to attract the attention of students and thus, enhance their cognitive abilities to pay attention to what is being watched. With the application of this video form in the teaching and learning process, it is expected to improve the efficiency and effectiveness of the learning outcomes. This is because teachers are able to prepare better and in an advanced manner with regard to conducting the process. In addition, this method allows the teacher to find information relevant to better facilitate teaching as well as convey information to the students effectively. With the use of 360°

Videos as teaching tools, the teaching and learning process will be more interesting and far more effective. Therefore, they just need to apply the necessary tools into the teaching and learning process. This will aid the aforementioned process by making it easier, simpler, and more concise as well as enjoyable because the students will be exposed to pictures and visuals that are live, interesting and easily comprehensible.

5.1 Implications for the Tourism Sector

The user-friendly, cost-effective and fast-natured design of social media has allowed for information sharing that is now more focused on visuals and videos that are high-tech in nature (Chan & Guillet, 2011). This can be applied to the tourism industry. According to Alrashid (2012), the development of the tourism industry today is influenced by the characteristics of technology, which eases business transactions for parties that offer services to tourists. Apart from that, Au (2010) and Jonscher (2011) argue that the advantage that comes with the use of high-tech videos in marketing should not be ignored by the tourism industry, if they wish to remain viable competitors. This utilisation refers to the elements and the virtual environmental techniques including the use of 360 degrees that can be incorporated into the videos to produce more interesting and advanced visual effects. With the use of such video technology, the tourism sector will be able to channel the attention of tourists into choosing the appropriate products. This is because such technology-driven videos will enlighten users via visuals and provide the necessary information. It also provides tourists the opportunity for in-depth scrutiny of the video as if they were experiencing it in real time. Such technology needs to be utilised in the tourism sector to promote travel, as tourists would be impressed and excited to travel to the featured locations (Yang Firoz & Wan Sulaiman, 2017). Hence, this video can be promotional in nature for tourists to decide on a travel destination (Yang et. al, 2017). As tourists have different backgrounds, they can then make their own choices through technology. For example, Arif & Haggen (2013) state that the main factor that affects the choice of accommodation is the comprehension of the information in the video. These videos, which are of interactive form, can facilitate user response is a favourite feature for tourists. Furthermore, this enables the tourists to decide by considering the additional feedback of other previous tourists. This means that high-tech videos like this have positive implications and in effect, improve the economy of the nation.

5.2 Implication for the Community

The 360° video is a platform that has been designed to be shared to the public or the communities. Therefore, high-tech videos can attract the interest of the local community because it can provide the appropriate information and a clear visual of what they need. With the use of high-tech videos, the shared information will excite the audience into following the journey till the end. This video form can draw the audience based on its interactive nature and its capacity to access other navigations (Hammoud, 2006). This is appropriate for civilians, all levels of society, and the community, especially those in rural areas. The features of the high-tech videos should be user-friendly and easily comprehensible to accommodate for the members of society that are lacking in the

technological front. These people will then be more comfortable with the use of 360 videos because it does not confuse spectators with the choices that are to be made. Furthermore, the video can be seen from various angles without the need to press any buttons. This makes it easier for users or the people who want a customer-friendly tools.

REFERENCES

- Arrasyid, R., Mamat Ruhimat, C. U., Abdullah, A. S., & Darsiharjo, H. R. (2020). Design, Development, and Evaluation of a Mobile Learning Application for Tourism Education. *Journal of Engineering Science and Technology*, 15(6), 3859-3875.
- Alrashid, S. A. (2012). Internet adoption in gulf cooperation council's tourism industry. *New Media and Mass Communication*, 3, 36-43.
- Au, A. (2010). Adoption of web 2.0 by tourism business in NSW. Report for Tourism New South Wales. Dapatan kembali daripada <http://www.archive.tourism.nsw.gov.au/>.
- Chan, N. L., & Guillet, B. D. (2011). Investigation of social media marketing: How does the hotel industry in Hong Kong perform in marketing on social media websites? *Journal of Travel and Tourism Marketing*, 28, 345-368.
- Chaigassem, T., & Tunming, P. (2019). Tourist behaviors and needs corresponding to historical tourism management at Khao Phra Wihan National Park, Sisaket Province, Thailand. *African Journal of Hospitality, Tourism and Leisure*, 8(1), 1-17.
- Corbillon, X., De Simone, F., & Simon, G. (2017, June). 360-degree video head movement dataset. In *Proceedings of the 8th ACM on Multimedia Systems Conference* (pp. 199-204).
- Davis, F. D., & Venkatesh, V. (1996). A critical assessment of potential measurement biases in the technology acceptance model: three experiments. *International journal of human-computer studies*, 45(1), 19-45.
- El-Gohary, H. (2012). Factors affecting E-Marketing adoption and implementation in tourism firms: An empirical investigation of Egyptian small tourism organisations. *Tourism management*, 33(5), 1256-1269.
- Fan, L., Li, J., Pan, Y., Wang, S., Yan, C., & Yao, D. (2019, September). Research and application of smart grid early warning decision platform based on big data analysis. In 2019 4th International Conference on Intelligent Green Building and Smart Grid (IGBSG) (pp. 645-648). IEEE.
- Huang, Y. C., Backman, K. F., Backman, S. J., & Chang, L. L. (2016). Exploring the implications of virtual reality technology in tourism marketing: An integrated research framework. *International Journal of Tourism Research*, 18(2), 116-128.
- Hofman, K., Hughes, K., & Walters, G. (2021). The effectiveness of virtual vs real-life marine tourism experiences in encouraging conservation behaviour. *Journal of Sustainable Tourism*, 1-25.
- Jonscher, C. (2011). Social media-potential, perception and usage as a marketing tool: The case of small and medium sized accommodation providers in Auckland. (Master dissertation). Auckland University of Technology, Auckland.
- Kelling, C., Väättäjä, H., & Kauhanen, O. (2017, November). Impact of device, context of use, and content on viewing experience of 360-degree tourism video. In *Proceedings of the 16th International Conference on Mobile and Ubiquitous Multimedia* (pp. 211-222).
- Kim, L. C., Lam, T. K., & Talib, A. Z. (2011, December). Acoustical heritage for virtual tourism on mobile platform. In *Proceeding of the International Conference on e-Education, Entertainment and e-Management* (pp. 273-276). IEEE.
- Kelling, C., Väättäjä, H., & Kauhanen, O. (2017, November). Impact of device, context of use, and content on viewing experience of 360-degree tourism video. In *Proceedings of the 16th International Conference on Mobile and Ubiquitous Multimedia* (pp. 211-222).
- Muzium Negara. Retrieved from: <http://www.muziumnegara.gov.my>.
- MOTAC, (2021), MOTAC's Efforts to Assist the Tourism Sector Affected by the COVID-19 Pandemic Feedback on The Press Statement by Malaysian Association of Theme Park & Family Attractions (MATFA) on Malaysian Tourism Industry. Retrieved from, <https://www.motac.gov.my/en/media/release/motac-s-efforts-to-assist-the-tourism-sector-affected-by-the-covid-19-pandemic-feedback-on-the-press-statement-by-malaysian-association-of-theme-park-family-attractions-matfa-on-malaysian-tourism-industry>.
- Pasanen, K., Pesonen, J., Murphy, J., Heinonen, J., & Mikkonen, J. (2019). Comparing Tablet and Virtual Reality Glasses for Watching Nature Tourism Videos. In *Information and Communication Technologies in Tourism 2019* (pp. 120-131). Springer, Cham.
- Rahimzhan, S., Oztüren, A., & Ilkan, M. (2020). Emerging realm of 360-degree technology to promote tourism destination. *Technology in Society*, 63, 101411.
- Sheikh, A., Brown, A., Watson, Z., & Evans, M. (2016). Directing attention in 360-degree video.
- Wagler, A., & Hanus, M. D. (2018). Comparing virtual reality tourism to real-life experience: Effects of presence and engagement on attitude and enjoyment. *Communication Research Reports*, 35(5), 456-464.
- Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. *MIS quarterly*, 425-478.
- Yang, L., Firoz, D. & Wan Sulaiman, W. (2017). The Impact of Tourism Advertisement Promotional Videos on Young Adults. *Social Sciences and Humanities*, 10-12.

- Piovesan, S. D., Passerino, L. M., & Pereira, A. S. (2012). Virtual reality as a tool in the education. Paper presented at IADIS International Conference on Cognition and Exploratory Learning in Digital Age (CELDA 2012), Madrid, Spain.
- Xu, Y., Dong, Y., Wu, J., Sun, Z., Shi, Z., Yu, J., & Gao, S. (2018). Gaze prediction in dynamic 360 immersive videos. In *proceedings of the IEEE Conference on Computer Vision and Pattern Recognition* (pp. 5333-5342).