Smart Tourism Technology (STT) with Mobile Based GPS System in Kuala Lumpur: Tag Along!

Nur Afiqah Binti Bakar and Naresh Kumar Appadurai

Abstract--- *Smart Tourism Technology (STT) has becoming a trend in the tourism sector nowadays. This is because of the rapid growth of technology that affects the development of various sector in Malaysia especially the tourism industry. Journeys are becoming more likely easier with the existence of the Smart Tourism Technology for the travellers; be it a solo traveller or those who travelling in a group. However, sometimes solo travellers have difficulties when traveling alone due to various reasons such as affordability and safety. Therefore, this research paper is a discussion of the growth of Smart Tourism technology (STT), its role in the tourism sector and problem usually faced by the solo travellers. A solution for the problem mentioned is proposed which is a mobile application called TAG ALONG! as an application that helps travellers to find an accompany or friends to go and visit popular tourism places in Kuala Lumpur, Malaysia. This research will use a quantitative research method to identify the respondents' experiences when traveling with a group and traveling solo.*

Keywords--- *Smart Tourism Technology, Smart Tourism, Solo Traveller, Mobile Application, GPS System, Tourist, Traveller, Travel Trend, Tourism Trend.*

I. INTRODUCTION

As years passed, tourism has continued to be one of the fast-growing industries and contributes towards the country's economy. This industry is a highly sophisticated and competitive business which requires the involvement of three different parties; the government, non-government and the public sector to achieve the ultimate success. The tourism sector in Malaysia has been reported that it contributes a total of 6.1% which is equal to RM 82.6 billion towards the nation's gross domestic product in the year of 2017 compared to RM76.6 billion during 2016 (Bernama, 2018). Therefore, as the other popular cities around the world, tourism plays a vital role in the economic life of Kuala Lumpur as it provides income and employment for the locals as well as the business opportunities. There are many factors that are leading to the growth of the tourism sector as it can be simply determined by the economic, political, cultural and technological changes of a tourist destination (Firoiu & Croitoru, 2013). According to (Chua, 2018), greater utilisation of technologies will help towards the development of the tourism industry as well as attracting more tourist through the technology platforms. The rise of technology from time to time has made it possible for tourist to have knowledges of their choice of destination, hence resulting in the rise of global tourism. Thus, technological changes have not only led to higher statistic of tourist from year to year, but also helps the emergence of Smart Tourism Technology (STT) in the tourism sector. The leap of technological era in tourism industry have caused many changes in the way people traveling, and the rise of Smart Tourism Technology (STT) promise an even more interactional and thrilling experience for the tourist. There are many tools that are used to

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enhance the usability of STT such as IOT, artificial intelligence (AI) and communication on mobile phones. According to Tourism Malaysia (2018), STT have been identified as a key thrust to the outstanding Malaysia's tourism-based receipt as it offers a better experience where every traveller's journeys are connected through the technology. Therefore, this research focuses on the Smart Tourism Technology using GPS System on mobile phones to enhance tourist and local experience when travelling in Kuala Lumpur.

II. BACKGROUND

An insight of past literature review provides an abundance of concepts of the trend of tourism from different authors and Smart Tourism Technology (STT) that helps expanding the tourism sector in Malaysia. Therefore, a great understanding of the Smart Tourism Technology is important to sustain its benefit in bringing a high income for the socio-economic of the country.

2.1 Tourism Trend in Malaysia for the past years, the research on smart tourism has been on going to continually sustain its role in the industry. The tourism sector is always linked towards the technological evolution as both of it expands parallelly. According to Gretzel et al. (2015), the word 'smart' in smart tourism is a description of a combined utilization of technologies that comprises smartness. The accomplishment of tourism industry nowadays is Smart Tourism Technology (STT) with Mobile Based GPS System in Kuala Lumpur: Tag Along! based on the revolution of smart tourism where it comprises the usage of cloud computing, networking technology, mobile technology, sensor technology and RF technology into an integrated system that produces various types of Smart Tourism (Wang, 2015). Tourism industry in Malaysia has been recognized as a National Key Economic Area (NKEA) as it is one of the biggest contributors towards the economic transformation in order to achieve Malaysia's aspiration of being a high-income country by 2020 (Mosbah & Saleh, 2014). Since 2017, it is estimated that the total number of tourist's arrivals in Malaysia is as much as 26.8 million which equal to RM 58 billion that contributes straight to the Malaysia's GDP (Pillai, 2018). Since before, Malaysia have made many initiatives such as "Visit Malaysia" and "Cuti-cuti Malaysia" and allocated some budgets for the tourism industry to promotes the tourism of Malaysia. Hence, understanding the growth and role of tourism in Malaysia will help to identify the demand of the current tourism trend.

2.2 Solo Travel Trends From day to day, the number of solo travellers is growing as it is the current travel trend. Based on the Hostelworld (2018) statistic, solo travellers have increased as much as 42% since 2016 proving that people are becoming braver to explore their journey alone. According to Bianchi (2015), people are choosing to travel alone because of feeling of relaxation and freedom that going on a solo trip offers as they can decide what to do without being bound to the schedule or agenda. However, according to Pereira & Silva (2018), women solo travellers choose to travel alone because they are driven by their own specific motivations such as feeling of personal fulfilment, independence and the need of getting out of their comfort zone. When traveling alone, people are more likely to be exposed with different kind of problems such as having the extra cost all to themselves, not feeling safe, and feeling lonely as there is no one to talk to (Bianchi, 2015). Hence, as the popularity of solo traveller have increases over the year, the existence of

Smart Tourism Technology will help to improve their experience when travelling alone without having to ask for help from people.

2.3 The Help of GPS System in Tourism Industry Back in the old days, tourist have problem in traveling with a cheaper cost as they did not have as much access of internet to search for the destination and getting information like we do now. As technologies today have been a part of human life, to get an information of the tourism destination is expected to be quick and easy. When people are traveling, they will need maps and list of information as a navigation and tool to direct them towards the desired location (Cavus & Kefas, 2014). However, it will be a troublesome to bring such a bulk of books and maps throughout their journey. Therefore, with the help of smartphone in Smart Tourism will bring a lot of convenience towards the travellers as it combines all function such as navigator, e-ticket, e-map and browser into a complete terminal carrier. (Liu & Liu, 2016). According to Cavus & Kefas (2014), there are several benefits of GPS-based mobile application for the tourism industry which one of it is that it provides all the important information for the travellers such as routes and nearest restaurant. When the tourist is happy and satisfied with the technology, they will come again, thus benefitting to the economy as it generally brings income towards the country. As GPS system helps in providing the navigation and information for the travellers, it removes away the hustle and trouble that travellers might have to face if they did not have this feature. Hence, GPS System is an important element to be included in Smart Tourism Technology (STT) as it offers numerous of solution for the tourist problems.

2.4 Mobile Application as a Tool for Smart Tourism Technology (STT) Since the revolution of smart phones has been developed rapidly from the past few years, it has left such a powerful impact on people's life as it provides various function and capabilities that helps solving daily life problems. Nowadays, travellers are expecting more and more of technology improvement that can help them personalized their journey and give tourism information with just a single click from their mobile phones (Wijesuriya, et al., 2013). Therefore, with the existence of Smart Tourism Technology (STT) by using mobile phone as a tool will give such conveniences to the tourist and local travellers in Malaysia. A research from Pozi (2013), is a simple mobile application that allows travellers to get the access of the facilities and services that are offered in Malaysia in order to reduce the cost and the budget that they must face. (Pozi, 2013). This research is similar to findings by Rashid (2017) that utilised the usage of mobile application as a tool for Smart Tourism Technology (STT) but for different purpose. Rashid (2017) has focuses his study on the Augmented Reality (AR) for tourism that uses mobile application to solve various problems faced by the travellers. Pozi (2013) have stated that her project is expected to bring such benefit for the international and local students as the application provides interesting information of the destination helps to reduce the social segregation between them. On the contrary, the research made by Rashid (2017) is aiming towards offering a better experience when the travellers have ease of access of the relevant information. A conclusion can be drawn from both research, which mobile application is a part of human's need. As technology evolved, one's need the help of smartphones to have better experiences during travelling and avoid any extra cost from not being able to access the information of the destination. Even though many researches have been done on Smart

Tourism Technology (STT), none of it have discussed on the Smart Tourism application for the solo travellers to connect with new friends and providing a solution for them have better experience during their journey. Therefore, there are still spaces for a new research to contributes towards this topic. In this research paper, I am proposing a new Smart Tourism Technology (STT) mobile based GPS system that provides interactive information on popular places at Kuala Lumpur and allows travellers to make new connections with other travellers.

III. PROBLEM STATEMENT

According to Tourism Malaysia mission statement, Malaysia seeks to make the tourism industry as a major contributor to the socio-economic development of the country, since 14.9% of the national economy are from the tourism sector and it has been increasing since the past twelve year which is only 10.4% (Bernama, 2018). As Kuala Lumpur is one of the famous destinations for travellers due to the culture and food, there are many travellers coming from year to year, be it a solo traveller or those who are travelling in a group. A statistic shown that there has been a trend of solo travellers that show an increment from 31% to 38% in 2018 including in Malaysia which can be seen through Klook's 2019 travel trends report (Web in Travel, 2018). The main problems that solo traveller are facing are affordability and safety during their journey as being alone makes them more vulnerable to crime and harm no matter where the destination is (Kahler, 2017). Although that having a companion when travelling together does not determine the safeness of a journey, it is still better than being alone as it also can improve the travellers' experience. Therefore, in response to this problem, this study proposed to improve tourist experience in visiting tourism places in Kuala Lumpur by using Smart Tourism Technology (STT) with mobile-based GPS System that will help to improve the travellers experience when visiting Kuala Lumpur, Malaysia.

The main purpose of this conducting this research is to help improve tourist experience in visiting popular tourism places in Kuala Lumpur, Malaysia by providing an interactive mobile application platform using Smart Tourism Technology (STT) with a GPS System. Through this application, tourist and local travellers can get information of the famous tourism places that are nearest to their location and see available routes to go there. They can also see any other travellers that are using the application and ask them if they want to go together to visit the places. With that, they will have a better experience as it will be easier to save the budget and be safer when having a companion to travel across Kuala Lumpur. In summary:

1. Identify a mobile application approaches that is suitable to help making better experiences for the tourist and local when travelling in Kuala Lumpur.
2. Determine the benefit of Smart Tourism Technology (STT) in the tourism industry.
3. Compare the available Smart Tourism Technology approaches with one another and find a new approach for the Smart Tourism Technology (STT) with GPS System to be used in Kuala Lumpur.

IV. RESEARCH QUESTIONS

1. What kind of technological elements that can be add up to improve the travellers' experiences when traveling in Kuala Lumpur?

This question is reflecting on tools of Smart Tourism Technology (STT) that improves the experience of the tourist and local when traveling.

2. What is the magnificent of the proposed system towards the government and the societies?

This question is reflecting on the benefit that both parties will be gained from the usage of the proposed system.

3. How does a mobile application tool helps in expanding the usage of Smart tourism Technology (STT) in the tourism industry?

This question is reflecting on the growth of smartphone and the usage of mobile application over the year.

V. SIGNIFICANCE OF THE WORK

The proposed solution which is TAG ALONG! can redound advantages for the government, local and tourist travellers, and the society. This application will not only help travellers that are traveling in Kuala Lumpur, but it also gives benefit at the government as it contributes in making higher statistic of the number of tourists visiting Malaysia, thus adding more income towards the socio-economic of Malaysia. On the other hand, if more people are coming to Kuala Lumpur to travel, it will help to provide more job opportunities for the society of Kuala Lumpur. Therefore, this application will help to contribute economically towards the development of Kuala Lumpur.

VI. METHODOLOGY

A type of methodology will be applied to obtain the information of the role of Smart Tourism Technology (STT) with GPS system in offering better experiences for the tourist and locals in Kuala Lumpur. The target audience of this survey is the local and international university student that are not born and staying in Kuala Lumpur, Malaysia. The number or target audience is 100 people.

6.1 Qualitative and Quantitative Research

For this research, a quantitative research will be used to identify the problem in generating numbers that can be finalized into a statistic form. The respondent will be analysed by asking to answer a structured questionnaire that contains close-ended answers (Askattest, 2017). The reason of this type of research is chosen is because it is easy to finalize a respondent's result in a statistical and graphical form. Other than that, it is also easy for this research to see any similarities and differences between the feedback of the respondents. The fact that the result will be obtained from the target audience are valid and reliable, it will help this research to calculate the probability of success.

6.2 Sample and Sampling Techniques

The sampling technique that will be used for this research is simple random sampling as it helps to pull out a small group of people to represent the large group of target audience in doing the survey (Dispersio, 2018). They way that this sampling will be held is by pulling out a small group of locals and international student that are from outside of Kuala Lumpur to do the survey (Bhat, 2018). The benefit of doing this type of sampling is that every student that are not from Kuala Lumpur have the equal chance to try join the survey, thus making this survey to be a valid sampling technique to measure their experiences in using STT with GPS system in Kuala Lumpur. Even thought that the only way to have a perfect accuracy to measure their experiences is by doing the survey with all the target audience, it would be impractical to do so. Therefore, the other benefit of using this type of technique is that it

is easier for the research to be held as it only will includes a small group of people that can represents the large target audience.

6.3 Data Collection Technique

The data collection technique that is suitable for this research is online questionnaire by using Google form. As Google form stores the feedback receive from the respondent, it is easier to analyse the result in detail (Smart Survey, 2018). Other than that, Google form is a free online tool that can save up the cost of conducting this survey with the respondent and it can be customized according to the preferences (Smart Survey, 2018). For example, as this research is conducting a quantitative research, the Google form answer can be customized to only close ended and numerical answers only which makes it parallel with the type of data analysis technique that have been chosen. Lastly, Google form also allows the limitation of respondent according to the research preference (Junio, 2018). The way that this online questionnaire will be spread to the respondent is via email and URL link through their phone numbers.

6.4 Data Analysis Technique

The data analysis technique that will be used for this research is statistical analysis by using Google sheet. As this research is using Google form to collect the data from the respondent, therefore using Google sheet is the best way to analyse the data. The Google sheet the data collected to be turned into various kind of charts other visualization to have a better inspection on the result (Murphy, 2017). For this research, the most suitable chart to be used are range chart and bar chart as the answer provided in the questionnaire is a close ended and a numeric scale (SurveyHero, 2018). The Google sheet is also a free online tool that can help saving up the cost of conducting and analysing the research towards the respondent.

VII. OVERVIEW OF THE PROPOSED SYSTEM

TAG ALONG! is a mobile application where user, as in tourist or local Malaysian can find an accompany or friends to tag along and go and visit the famous tourism places in Kuala Lumpur, Malaysia to improve their experience by travelling with friends or a partner. The user will be required to create an account to see the various recommended tourism places in Kuala Lumpur and to find other users that are currently using this app within 1-kilometre distance to their current places. This application allows the users to see different kind of available routes and public transports to go to the desired tourism destination around Kuala Lumpur. Furthermore, the estimation of the entrance fee and fare fee will be included to help the user to estimate their budget during the journey. With the help of GPS System, user can pinpoint a location of where they want to meet with another user that agrees to visit the same tourism places. For example, if a user decided to visit the National Museum and found another user that wants to go to the same place, they can pinpoint the LRT station as the place to meet each other and continue their journey together to the desired destination. The hardware and software requirement needed for this proposed system would be as follows:

7.1 Hardware Requirements

A smart phone with GPS system as the application will list down the nearest popular tourism places and other

users from the current user location. Other than that, the GPS system will also be used to pinpoint a location of where the users should meet with each other. ☐ Internet connection to chat with other users and to use the GPS system.

7.2 Software Requirements

Android 7.0-7.1.2, Nougat until the latest version of Android ☐ IOS 12.0.1 until the latest version of IOS Android Studio and Swift programming language will be used as it is a flexible application that can be used in both IOS and Android platforms.

VIII.   CONCLUSION

Overall, this proposed project of this research paper is a mobile application which is a tool used for implementing the Smart Tourism Technology (STT) with GPS System. If the travellers are happy and have good experiences when travelling in Malaysia, it will help to benefit the government and the travellers as the socio-economic income will increase parallelly when the number of tourists that are coming to Malaysia increases. Thus, this application helps to improve the journey and the experiences of the tourist and local, especially the solo traveller when visiting Kuala Lumpur, Malaysia.

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