

## INFRASTRUCTURE INFLUENCE ON TOURIST MOVEMENTS IN MELAKA

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*This study presents the type and infrastructure elements that contribute to the movement of tourists in the Heritage City of Melaka, Malaysia. The Tourist Movement Infrastructure framework has been proposed to study the infrastructure elements that influence the tourist movements. Questionnaires were used as a medium to obtain feedback from tourists. Data was analyzed from the 197 feedback obtained from domestic and international tourists. Factor analysis and regression analysis are used to achieve the study objectives. This study introduces infrastructure elements that could affect the tourist movements in historical areas and may be applied in historical areas that have similar geographical characteristics. Particularly, the main infrastructure that affects tourist movement is accessibility. Overall, These results of this study can help the decision makers of Melaka historic areas to improve the provision of infrastructure accessibility in the study area.*

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JEL Classification: *L83, M1, O1*

### INTRODUCTION

A number of authors, including Gunn (1988) and Inskeep (1991), have cited that the infrastructure base of a country is a potential determinant of the attractiveness of a tourism destination. Infrastructure forms an integral part of the tourism package and is at times viewed as the prime mover for the many other economic sectors. Smith (1994) was among the first to acknowledge the role of service infrastructure in creating a product experience. Meanwhile, cities that exist as a result of history and great civilization have always conserved their buildings and



city's culture as a historical attraction. Athens, Barcelona and Kazan Kremlin are the heritage destinations of choice around the world that display great architectural uniqueness, heritage attractions and culture that are preserved to this day. These buildings and cultural relics of the past is a place that provides visitors with a story about the society, its traditions, and its past (World Tourism Organization (UNWTO), 2012). However, the existence of these attractions is incomplete without the convenience of facilities and services to enhance the comfort and accessibility of tourists during their vacation (Gunn, 1972 as cited by Lee, 2009). Hence the question is, what type of facilities are required by tourists while visiting a heritage destination? This question involves the tourist motivation to visit a historical area. According to Lee (2009), exploring heritage attractions is one of the main reasons for tourists to visit historical sites. It involves tourist movements at heritage sites. Most previous researches such as Lew and McKercher (2006), Rahman, Ismail and Wai (2011) and Liu, Tzu-How Chu, and Chang (2013) studied on the spatial tourist movement and focused on the shape of movement produced, besides the factors that affect tourist movements. However, less attention was given to the tourist needs in order for them to move from one attraction to another. Xia (2007) stated that these researches involving tourist movements could help tourist organizations to improve infrastructure and facilities management. Hence this study aims to expand the research scope involving tourist movements and studying the infrastructure provision required by tourists when they explore the historic areas.

## **LITERATURE REVIEW**

### **Tourism Infrastructure Affecting Tourist Movements**

There is a variety of infrastructure provided for the convenience of tourists. However, three types of infrastructure have been identified to affect the movement of tourists to reach a destination. The first is the public facilities which are a facility that benefits the public, and is to be used whether with payment or otherwise (Center for Inclusive Design and Environmental Access (IDEA), 2013). These facilities consist of public toilets, public phones, recreation, ATM machine, money changer and drinking fountains (Singh & Singh, 2007 ; IDEA, 2013). It is a type of infrastructure that is shared amongst the local residence and tourists (Nor, 2013). Research by Gunn (1972) also shows that facilities and services are elements that need to be provided by the authorities for the ease of tourists visiting a destination. The provision of public facilities is vital to

increase the comfort of tourists when they visit a tourist attraction such as the museums, monuments, heritage buildings and traditional markets. The second would be the accessibility element. This element plays an important role because it involves the movement of tourists from one destination to another. Rahman et. al (2011) stated that urban transportation is vital because it increases tourist accessibility. Hence, there is a direct relationship between accessibility and transportation at a tourist destination. Research conducted by Lew et. al (2006) discovered that transportation modes could be divided into automobiles (rented vehicles), tour company transportation (organized tours), public transport (buses, taxis, trams, trains and ferries), and walking. These transportation infrastructure utilities can increase tourist accessibility in terms of travel time and travel costs. The third factor is services and product of tourism. The tourism industry integrates with many other sectors in order to keep growing. This includes package tours, the information center and availability of guides (Singh et.al, 2007). According to Smith (1994), tourism services and products could influence tourist experiences. As coded by Pookaiyaudom (2012), these products and services are used during the trip or after; resulting to higher tourist satisfaction. On the whole, this research applies three infrastructure elements which are public facilities, accessibility and tourism products and services that affects tourist movements.

## **Tourist Movement**

Tourist movement is an important element that needs to be considered by planners and decision makers alike. The movements of tourist are difficult to predict due to the movement being 'performed art' (Haldrup, 2004) with individualistic forms (McKercher & Lau, 2008). This issue resulted in very few studies focusing on this subject, particularly a local level destination (Douglas, 1987; Prideaux, 2000). Studies on tourist movement within a destination will provide a better understanding on tourist behaviour and indirectly will help in the development of a tourist destination (McKercher et. al, 2008). The concept of tourist movement constructed by Lew et. al (2006) states that it is affected by two main factors which are destination and tourists. This concept is proven when a study by Rahman et. al (2011) found that tourist movement at Melaka Heritage City is affected destination factors in terms of the location of tourist attraction, shopping centres and food. However, identifying the factors alone is incomplete without further studying the

needs of tourists to move to their destinations of choice. This study intends to fill in the gap through this research.

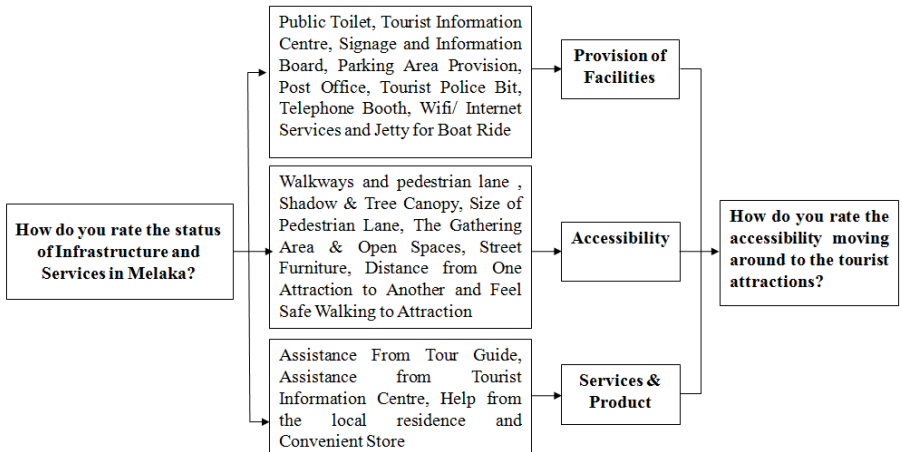
### **CASE STUDY: THE MELAKA WORLD HERITAGE SITE, MALAYSIA**

The heritage city status affects the destination of choice process for tourists (Crompton and Ankamah, 1993; Gartner, 1989; Goodall, 1988). Indirectly, the heritage elements provides a positive image and helps to promote a particular destination (Secondi, Meseguer-Santamaría, Mondéjar-Jiménez, & Vargas-Vargas, 2011). This research is conducted at Melaka Heritage City, Malaysia. Heritage tourism in Melaka has become known to many since Melaka was declared as a World Heritage Site in July 2008. This declaration has increased the number of tourist arrivals from year 2008 until today (Melaka Municipal City, 2011). This edition shows that Melaka offers a unique heritage product and fits the needs of tourists, other than the campaigns organized by Tourism Malaysia and the initiative by state administration. According to Lew et. al (2006), the movement of tourists is based on the attractions in an area. Melaka Heritage Site consists of three main areas that are highly visited by tourists. This includes the core zone, buffer zone, and heritage villages. However, according to the Melaka Local Planning Authority (2007) and research by Jusoh, Marzuki, & A. Hamid (2013), the focus of tourist attractions is the core zone due to the various heritage attributes such as museums, monuments, traditional crafts and heritage buildings centered in this area. Therefore, this research is focused on the infrastructure elements that contributed to the tourist movements in the core zone of the Melaka Heritage City.

### **RESEARCH METHODOLOGY**

This study applies the quantitative method which is the questionnaires as mediums to obtain feedback from tourists regarding infrastructure and service facilities at the study area. There are three processes involved which are the construction of questions in questionnaires, data collection, and data analysis. The construction of questions for questionnaire purposes has taken into consideration the three main inputs which are the reference and thoughts of experts, previous researches, and inventories at the study area. Feedback from tourists is measured using the 5 likert-scale which are (1)Very Poor (2)Fair (3)Good (4)Very Good (5)Excellent. Previous researches show

the direct connectivity between infrastructure and tourist movement at a destination. Figure 1 shows the research framework for this study.



**Figure 1. Research Framework**

## Data Collection

A total of 200 questionnaires were distributed to both domestic and international tourists. Questionnaire forms were distributed through simple random sampling (A.Lone, Rather, & Jain, 2013) at main areas that are identified to be tourist hotspots. According to the Authority (2007) and research by Jusoh et. al (2013), the main attraction for tourists in study area were at areas such as Dutch Square, The Porte De Santiago and Jonker Street. In order to obtain feedbacks that were more accurate, questionnaire forms were only given to the tourists that have visited Melaka for more than a day.

## Data Analysis

There are only 197 survey forms that could be used for analysis. Three survey forms could not be analysed due to the insufficient and incomplete feedback obtained. Feedbacks from tourists were analysed using the Statistical Package for Social Science (SPSS) version 20. Descriptive analysis was used to obtain the tourists' demographic profile. For the purpose of data reduction, factor analysis was conducted (Pallant,

2010). This was followed by reliability analysis to identify the internal consistency of the scale. And finally, the regression analysis was conducted to identify the elements that affect the movement of tourists.

## RESULTS

### Tourist's Demographic Profile

A total of 197 respondents were able to complete the questionnaire forms. The results show that 66.2% respondents are domestic tourists while the remaining were international respondents. The results of the descriptive analysis show that 59.6% of the respondents are female and the other 40.4% respondents are male. The dominant age group of the respondents is between 21-30 years old. This result indicates that the younger generation is interested in the history of the place. In terms of their patterns of travelling, the results point out that 46.2% of respondents are travelling with a group of friends. The majority of the respondents are return tourists. Table 1 provides a summary of the respondent's profile.

**Table 1.** The respondent's Demographic Profile.

<b>PROFILE</b>	<b>Frequency (N = 197)</b>	<b>Percentage (%)</b>
<b>NATIONALITY</b>		
Domestic	129	66.2
International	68	33.8
<b>GENDER</b>		
Male	79	40.4
Female	118	59.6
<b>AGE</b>		
Below 20 years old	23	11.9
21-30	112	56.7
31-40	31	15.5
41-50	14	7.2
51 years and above	17	8.8
<b>TRAVELLING PARTNER</b>		
Individual	12	6.1
Partner	34	17.3
Family	52	26.4
Group of Friends	91	46.2
Tourism Package	8	4.1

**TYPE OF TOURIST**

Return Tourist	120	60.9
First Timers	77	39.1

**Factor Analysis**

The tourism infrastructure in the study area was evaluated based on 21 selected items. Factor analysis is used to determine the type of infrastructure that falls in each aspect. By using factor analysis, the construct validity of questionnaires could be tested. According to Pallant (2010), in order to identify whether the data set is suitable for factor analysis, the Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) value is .6 or above and that the Bartlett’s Test of Sphericity values should be .005 or smaller. The analysis for case study shows that the KMO value is .836 and Bartlett’s is significant ( $p = .000$ ). The results are significant and the factor analysis may be continued. A total of 21 items have been selected for factor analysis and only 17 items are accepted as the Eigenvalues above 1. 4 items that are removed includes the tourist information centre, 24-hours convenient shop, jetty and signage and information board. Table 2 indicates the items that measure the public facilities, accessibility, product and services.

**Table 2.** The Factor Analysis: Components of Satisfaction Variables

Scale Item	Factor Loadings	Eigenvalue	% of Variance	Cum %	Cronbach Alpha Value
<b>Factor 1: Public Facilities</b>	.794				
Post Office	.719				
Tourist Police Bit	.648	3.707	17.650	17.65	.773
Public Phone	.597			0	
Wi-Fi	.586				
Parking Spaces	.481				
Public Toilet					

<b>Factor 2: Accessibility</b>						
Pedestrian Walkways	.638					
Width	.629					
Feel Safe	.609	3.199	15.232	32.88	.759	
Street Furniture	.592			2		
Open Spaces	.525					
Pedestrian Walkways	.514					
Distance Of Attractions	.508					
Tree Shades						
<b>Factor 3: Product &amp; Services</b>						
Help From The Local Residence	.744					
Assistance From A Tour Guide	.678	2.801	13.336	46.21	.791	
Assistance From Tourist Information Center	.624			9		
Attitude & Culture Of Local Residence						

### Factors affecting tourist movements in the study area

Further analysis is conducted in order to identify the infrastructure that affects the movement of tourists that visit the historical sites in Melaka. Table 3 shows the results of regression analysis. The findings from this analysis shows that the amount of variance explained by these variables was 13.6% ( $R^2 = 0.136$ ,  $df = 3$ ,  $F = 7.301$ ,  $p < 0.000$ ). This was an acceptable predictive strength and it was significant. From this model, the specific variables revealed to make a significant unique contribution to tourist movement is accessibility.

**Table 3.** Regression model

Type of Infrastructure	Beta	<i>p</i>
Public Facilities	-.001	.990
<b>Accessibility</b>	<b>.338</b>	<b>.001</b>
Tourism Services	.058	.556

$$R = 0.369, R^2 = 0.136, df = 3, F = 7.301, p < 0.000$$

## **DISCUSSIONS**

This paper studies the infrastructure that affects the tourist movements in Melaka Heritage City. Three types of infrastructure that has been identified to affect the movements include the public facilities, accessibility and tourism services (IDEA, 2013; Gunn, 1972; Rahman et. al, 2011; Lew et. al, 2006). However, feedback from tourists at the study area shows that the most important element required for their movement is accessibility. Israeli et. al (2010) states that transportation accessibility is vital for tourist movements at a heritage city. For this study, transportation elements that were taken into account is the mode of tourist movements. This mode of tourist movements will determine the level of tourist accessibility to an area. In Melaka, the main transportation mode in the core zone of the heritage area is by walking (Jusoh et. al, 2013). This is influenced by tourist attraction factors that are positioned at walking distances. Other than the distance factor, the congestion issue (Authority, 2007) becomes a main constraint that discourages tourists to use other transportation elements available. Therefore, the results from this study presses upon the pedestrian walkway aspects in terms of provision level and size, together with the location distance of tourist attractions that affects tourist movements (Refer Table 2).

Besides that, the results from this study shows safety items to be among the elements of accessibility. Maslow's theory of psychology could be related to safety items as it could affect a tourist decision. Therefore, the relation between safety and tourist movements could be translated in the form of criminal activity level at a destination. In Melaka, tourist safety is guaranteed by the police patrol conducted from time to time and the use of closed-circuit television (CCTV). Through inventories, there are 7 CCTVs identified in the study area and is located at main tourist attractions such as Jalan Hang Jebat, Jalan Kota, Dutch Square, Porta De Santiago, Jalan Merdeka, Jalan Laksamana and Melaka River Cruise Jetty (Authority, 2007). Based on Authority (2007), focus on the provision of infrastructure is located in urban spaces for the use of tourists and the public. A complete urban spaces provision includes pedestrian walkways, signage, tree shades, lamp posts, rubbish bins and paved sidewalks. Analysis shows that these suggested items are part of the accessibility items needed by tourists such as open spaces, street furniture and tree shades.

## CONCLUSIONS

In general, this research adds the tourist movement scope through the role of infrastructures. Previous research focuses on spatial tourist movements and movement concepts. However, this research focuses on the type of infrastructure that affects tourist movements. So that, this study is used as a base to expand this study on the influence of infrastructure on tourist movements. According to the literature, the three elements that affect the movement of tourists are public facilities, accessibility and tourism services. However, this research conducted at Melaka World Heritage Site shows that only the accessibility infrastructure is required by tourists to explore the heritage elements in the study area. These accessibility infrastructures consists of 7 items which pedestrian walkway width, feeling safe, street furniture, open spaces, pedestrian walkways, distance of attractions and tree shades. These provisions of accessibility items are very much needed to increase the accessibility of tourists from one place to another. Hence planners and decision makers could make these items as reference to increase tourist accessibility when visiting a historical area. This would allow for improvements on the existing facilities to enhance its quality and therefore affect the tourist satisfaction visiting the historical areas, especially so at Melaka Heritage City. In order to obtain study results that are more specific, it is suggested that the next research to be conducted according to segmentations of tourist's demographic profiles. Therefore, the need for accessibility infrastructure is more accurate in satisfying the needs of tourists.

## REFERENCES

- Center for Inclusive Design and Environmental Access (IDEA). (2013, August 27). Retrieved from <http://idea.ap.buffalo.edu/udny/Section4-1e.htm>
- Melaka Local Planning Authority. (2007). *Special Area Plan Melaka (SAP)*. Melaka: Melaka Historic City Council.
- Tourism and Transport Forum Australia (TTF). (2012). *A Review Of Tourism Infrastructure Policy & Priorities For Industry Consultation & Discussion*. Sydney.

- A.Lone, P., Rather, N. A., & Jain, D. S. (2013). An Empirical Analysis Of Tourist Infrastructure Quality In Jammu And Kashmir. *Radix International Journal Of Research In Social Science (RIJS)*, 2(2).
- Crompton, J.L., & Ankomah, P.K. (1993). Choice set propositions in destination decisions. *Annals of Tourism Research*, 20(3), 461-476
- Douglas, P. (1987) *Tourism Today: A Geographical Analysis* (Harlow: Longman).
- Gartner, W.C. (1989). Tourism image: Attribute measurement of state tourism products using multi-dimensional scaling techniques, *Journal of Travel Research*, 28(2), 16-20.
- Goodall, B. (1988). How tourist choose their holidays: An analytical framework. In B. Goodall & G. Ashworth (Eds.), *Marketing in the tourism industry: The promotion of destination regions* (pp. 1-17). London: Routledge.
- Gunn, C.A, Eds. (1988), *Tourism planning* (second edition), New York: Taylor & Francis.
- Gunn, C. (1972), *Vacationscape: Designing Tourist Regions*, Austin: University of Texas.
- Haldrup, M. (2004). Laid-back mobilities: second-home holidays in time and space, *Tourism Geographies*, 6(4), pp. 434-454
- Inskeep, E. (1991), *Tourism Planning: an integrated and Sustainable Development approach*. New , Van Nostrand Reinhold.
- Jusoh, J., Marzuki, A., & A.Hamid, N. F. (2013). Challenges in Discovering the Hidden Heritage Attractions in Melaka World Heritage Site. *Architecture Politics Art Conference 2013*. Istanbul: Eastern Mediterranean Academic Research Center (DAKAM).
- Lee, D. K. (2009). *Exploring The Differences Between Domestic and Foreign Cultural Tourist Behaviour Visiting Malacce*. Kuala Lumpur: Universiti of Malaya.
- Lew, A., & McKercher, B. (2006). Modeling Tourist Movements: A Local Destination Analysis. *Annals of Tourism Research*, 33(2), 403-423. doi:10.1016/j.annals.2005.12.002
- Liu, C.-H., Tzu-How Chu, M.-L. L., & Chang, C. H. (2013). Exploring Spatial Pattern of Tourist Behaviour Using Geographic Information Techniques. *Latest Trends in Renewable Energy and Environmental Informatics* (pp. 361-366). Kuala Lumpur: WSEAS Press.

- Mckercher, B., & Lau, G. (2008). Movement Patterns of Tourist within a Destination . *An International Journal of Tourism Space, Place and Environment*, 355-374.
- Melaka Municipal City. (2011). *Melaka Basic Data*. Melaka: Melaka Municipal City.
- Nor, R. (2013, February 14). The Heritage Site Management in Melaka . (J. Jusoh, Interviewer)
- Pallant, J. (2010). *SPSS Survival Manual A Step By Step Guide To Data Analysis Using The SPSS Program 4th Edition*. United Kingdom: The McGraw-Hill Companies.
- Pookaiyaudom, G. (2012). *A Comparative Analysis of International and Domestic Tourists' Perceptions of Community-Based Tourism: The Case of Pai, Thailand*. United Kingdom: University of Central Lancashire.
- Prideaux, B. (2000). The Role of the Transport System in Destination Development. *Tourism Management* 21:53-63
- Rahman, J. I., Ismail, H. N., & Wai, C. L. (2011). Inquiry into Tourists Movement Flow Pattern in the Melaka World Heritage Site: A Space Syntactic Analysis. *APSA Congress* (pp. 1475- 1485). Tokyo: Asian Planning School Association.
- Secondi, L., Meseguer-Santamaría, M. L., Mondéjar-Jiménez, J., & Vargas-Vargas, M. (2011). Influence of tourist sector structure on motivations of heritage tourist. *The Service Industries Journal*, 1659-1668.
- Singh, K., & Singh, R. S. (2007). Tourism Potential and Tourist Infrastructure In Amritsar. *Institute of Town Planning India (ITPI) Journal*, 58-66.
- Smith, S. L. J. (1994), “The tourism product”, *Annals of Tourism Research*. 21(3): 582-595.
- World Tourism Organization (UNWTO). (2012). *Global Report on City Tourism AM Report*. Madrid: World Tourism Organization (UNWTO).
- Xia, J. (. (2007). *Modelling The Spatial - Temporal Movement Of Tourists*. RMIT University, School of Mathematical and Geospatial Sciences. Melbourne: RMIT University.

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