

Impacts of Sustainable Transportation on City Tourism: a case of Chatuchak Market in Thailand

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1 ABSTRACT

The paper describes the interdependences in transport between tourists, local customers and store owners in Chatuchak Market (Thailand). It is the most famous market in Thailand and is located in the center of Bangkok nearby the Northeastern Bus Terminal. A mass transit system was launched in Bangkok in late 1990s as Sky train (BTS) and Bangkok underground Mass Rapid Transit (MRT) was implemented in the beginning of the year 2000. These transport systems have played an important role for economic growth in Bangkok, particularly for shopping destinations that were promoted along the BTS and MRT lines and become good examples of environmentally friendly transport of densely populated city of Bangkok. The effective mass transport system is fundamental to destination development and generates visitors and business. Tourism is the key benefit on the economics of the Chatuchak weekend market and local customers. Mass transit systems and services are providing effective accessibility for this weekend market. The market area with more than 15,000 stores and more than 200,000 people is designed for Pedestrians.

Analysis of the transport behavior of the market visitors shows that 63% of the visitors respondents traveled to the market by public transport (Buses, BTS, MRT, public van). In addition, 24% of the respondents arrived by taxi and 2 % used the Tuk tuk (three wheels vehicle with roof). The other visitors walked or used their car, bicycle or motorcycle. 39 % used more than 15 minutes and 16% used less than 5 minutes to walk into the market. Furthermore, visitors were asked to assess the satisfaction of 12 principles and 12 important issues to engage the transport for accessing the market. The important variables were linked to the public transport intensity and existing infrastructure surrounding the market. The second target group of this study are store owners. The analysis shows that 60 % of the store owners traveled to the market by car, 12 % of the respondents used Tuk Tuk and taxi . The market is designed as a car free environment. During opening hours no car is allowed to enter. The paper shows these important preconditions for the high share of public transport and describes the quality of connecting infrastructure for a car free accessibility of Chatuchak market.

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Keywords: Mass transit, public transport, pedestrian, tourism, Thailand

2 INTRODUCTION

Chatuchak Weekend Market is the most famous market in Thailand which located in the center of Bangkok nearby the Northeastern Bus Terminal (Mo Chit 2) and it is on Kamphaeng Phet 2 Road, Chatuchak, Bangkok, which is the largest market in Thailand. Chatuchak is claimed as a world's largest market is commonly known among Thai's as JJ (jay jay). With more than 15,000 retailers in 27 sections, occupying some 27 acre space, what makes Chatuchak busy every weekend is not only the fun of bargaining prices but an incredible variety of merchandise it has to offer, from latest fashion items and vintage decor finds to Thai crafts and teak wood tables. Chatuchak market is held on the grounds of a park donated to the people of Thailand by the State Railway according to the wishes of His Majesty the King on the anniversary of HM's 4th Cycle birthday in 1976. Inside the park there are many gardens of various themes, an herb garden, and a garden devoted to flowers in literature. (tourismthailand.org, 2016). More than 200,000 visitors come here to buy the goods on offer in every weekend. (Bangkok.com, 2017) As a center of the city of Bangkok, there was a study related to how Chatuchak is one of the important destination for shopping.

3 LITERATURE REVIEW

Shopping tourism was identified as a fundamental element for city tourism. Through the development of retail services and offerings, shopping tourism can serve as a platform for urban regeneration by adding value to areas here to fore less visited by tourists. Cities utilize shopping and retail experiences to boost the appeal of the destination, supporting economic growth and income generation. Shopping tourism and cities form a symbiotic partnership (UNWTO,2014). In the last fifty years, land use and transportation have been closely connected; first in the dense, mixed use walking city, whose limited transportation options and travel speeds ensured that urban land use remained closely integrated, and later in the transit city, with its fixed train and tram systems. The advent of the automobile, however, and to lesser extent the diesel bus that mean for the first time that transport could be used to join people from thier home to city. Therefore transportation land use connection was broken and automobile dependence became established. (P.Newman ,J.Kenwothy,1999) Traffic congestion is one of the most significant cumulative drawbacks of motorised mobility, generating negative externalities such as vehicle loss hours, restricted accessibility, wasted fuel and driver frustratin (Rodier, C.J., Johnston, R.A., Shabazian, D.R., 1998). In 2016 ,INRIX reported that Bangkok drivers spent average 64.1 hours in traffic jams become the 12th most congested city in world (Bangkok Post,2017). City transportation requirements cannot be satisfied exclusively by private cars. Public transportation has advantages over private one both in the city centre and along the main highways in dense urban areas. In order to deal with the increasing flow of passengers and cargo, new concepts in the city transportation area are requested. Therefore, the development of new transportation modes has a growing interest (Y. Lianga, J. Serranob, N. A. Pecorarib,V. Serranob, 2013). Traffic congestions, increasing time consuming travels in Bangkok due to inefficient transport system both directly and indirectly led Chatachak market to a declining stage of most popular place for tourists in late 1990s.

To establish a sustainable mobility system, transport modes should adhere to objectives that are socially acceptable (ensuring traffic safety and protecting health), ecologically justified (decreasing fuel consumption and greenhouse gas emissions) and economically feasible (accessible and efficient) in order to serve the societal needs of today and in the future (Vermote, L., Macharis, C., Putman, K., 2013).The concept of sustainable transportation is vital to ensure environment clean, healthy and high quality. The concept is also emphasis on the human life and the environment, to meet current and future needs (M. R. Mat Yazid, R. Ismail, R. Atiq, 2011).

An alternative transport mode had been introduced and create the contribution towards sustainable mobility (Vermote, L. et al.,2013). The launch and operations of mass public transit in Bangkok has significant influences to the convenient and ease of traveling in Bangkok. The study can be related on a more efficient public transport and mass public transit as well as sustainable urban planning in Bangkok as the part of city tourism and shopping tourism.

4 RESEARCH METHODOLOGY

Survey data and statistical analysis had been done by interviewing of local customers and tourists during weekend by using random sampling as a methodology. An interview of shop owners by random sampling of shops during opening time, asking for the development trend of customer before and after mass transit was developed. Study used a 5-point for rating scale (1–5) in most questions on the satisfaction and importance issues from both groups. The general information parts that collected in this survey had been adopted in the appropriate respondents.

The secondary data will be analysed from the collecting data that related in organizations and existing data.The data distribution and correlation analysis will be carried out to find out how causes and effects are related.

5 RESEARCH RESULT

There are two main groups for the survey, first is visitors both local visitors and foreigners and second is the shop owners in the market. The result of survey during July and August, 2016 found that 46.72 % of visitors who responded the survey have 16-30 years old and 42.34 % have 31-45 years old. In additional 1.70 % , 8.76 % and 0.79 % have age in range of under 15 , 46-60, and more than 60 years old. The majority of respondents are living in Bangkok and vicinity 40.15 % , 33.82 % is living outside Bangkok and 24.84 % come from oversea. The respondents are employed by 37.39 % , 24.09 % of the result is self -employed

persons. The purposes of visitors are shopping and tourism 68.86%, additional 9.25% want to make recreation , picnic and do sport in the park nearby , visit friends and relatives is 10.71% and there is 11.19 % of respondents come for working. In order to travel accompany, 39.90 % of respondents come with friends, 29.68 % come with family and relatives , 25.06 % come alone and 5.35 % come with business partners or co-workers.

The result of survey can be explained by using public transport to the market was favored issue by 62.77 % of the visitors respondents said they traveled to market by public transport (Buses, MRT, BTS, public van) . In addition, 23.60 % of the respondents traveled with by taxi and 2.43 % traveled by Tuk tuk . There are small number of visitors traveled to market by private cars, bicycles, motorcycles and walk as 8.28 % , 0.49 % , 0.49 % and 1.95 % as show in figure 1. The connection between market and travel to the end points surrounding the market found that 61.54 % people walked from Phaholyothin Bus station and 10.61 % walked from MRT Chatuchak station. The rest of respondents walked form parking places surrounding the market. Result of walking time can be identified that 38.97 % used more than 15 minutes to walk into market, 28.92 % used 5-10 minutes, 11.18 % used 11-15 minutes and 15.93 % used less than 5 minutes to walk into the market.

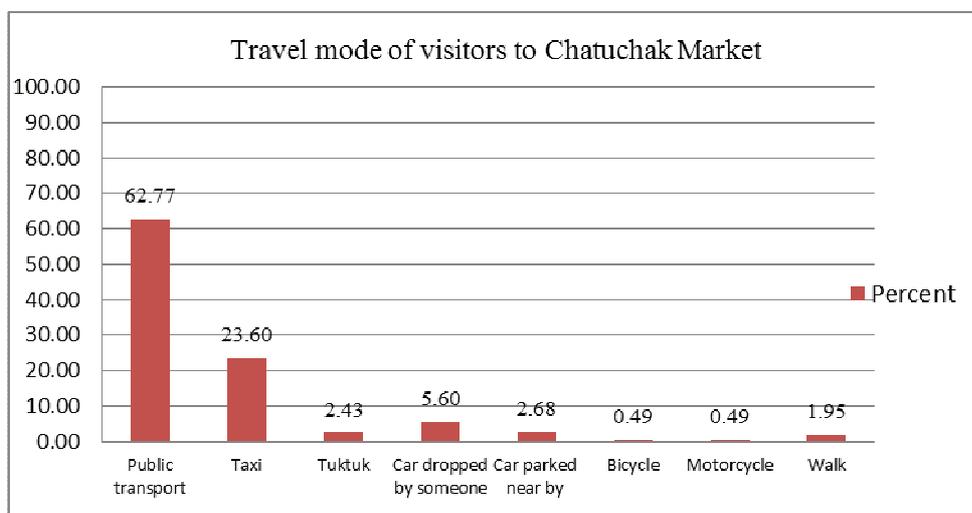


Figure 1 travel modes of visitors

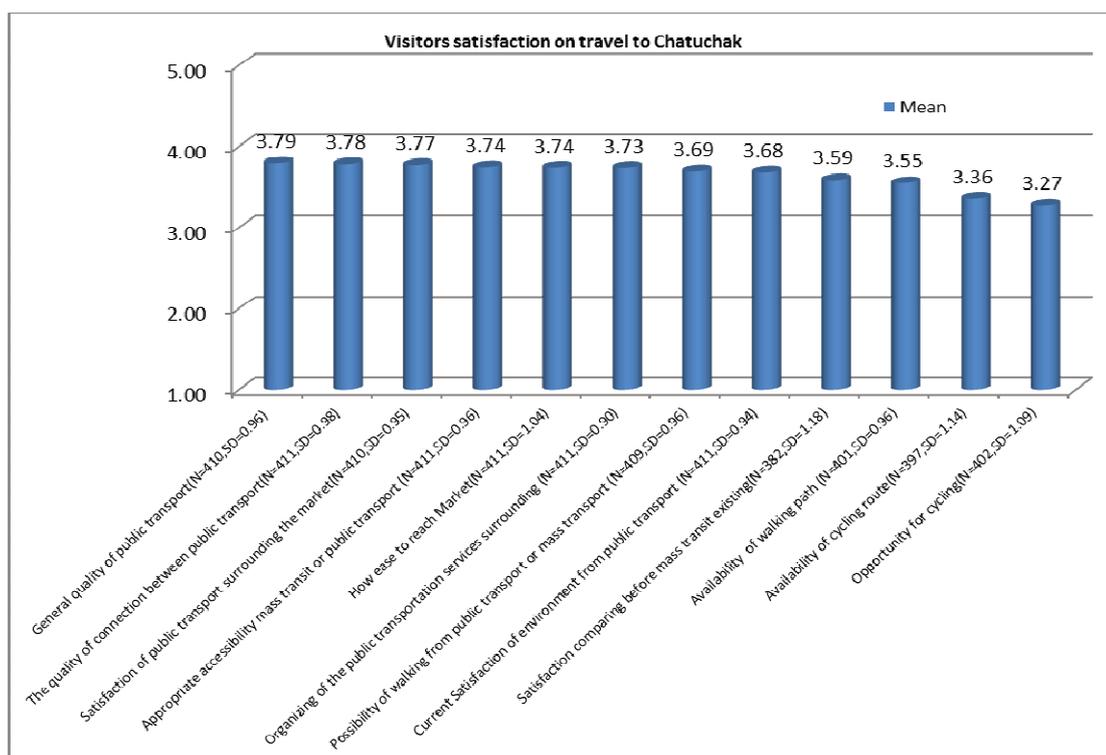


Figure 2 Visitors satisfaction on travel to Chatuchak

The visitors were asked to assess the satisfaction of 12 principles and how they think about the importance issues that engage the transport for accessing the market in 12 principles. The importance variables were linked to the public transport intensity and existing infrastructure which related to transport surrounding the market.

The level of satisfaction in transport from visitors of market, The level of satisfaction are 1 to 5 , 1 is not satisfy , 2 is little satisfy, 3 is satisfy , 4 is very satisfy and 5 is absolutely satisfy, these factors can be ranked from the highest means score to the lowest means score show in figure 2 as followed:

- (1) General quality of public transport with the means score of 3.79
- (2) The quality of connection with the means score of 3.78
- (3) The public transport surrounding the market with the means score 3.77
- (4) Appropriate accessibility on mass transit or public transport with the means score of 3.74
- (5) Destination can be reach with the means score of 3.74
- (6) Organizing of public transport services with the means score of 3.73
- (7) Possibility of walking from public transport or mass transit with the means score of 3.69
- (8) Current public transport and environment with the means score of 3.68
- (9) Existing walking path with the means score of 3.59
- (10) Comparison before and after mass transit existing with the means score of 3.55
- (11) Availability of cycling route with the means score of 3.36
- (12) Opportunity to cycling with the means score of 3.27

The level of importance in transport from visitors of market, these factors can be ranked from the highest means score to the lowest means score show in figure 3 as followed:

- (1) Organizing of public transport services with the means score of 3.93
- (2) General quality of public transport with the means score of 3.88
- (3) Destination can be reach with the means score of 3.84
- (4) The quality of connection with the means score of 3.82
- (5) Appropriate accessibility on mass transit or public transport with the means score of 3.82
- (6) The public transport surrounding the market with the means score 3.81
- (7) Current public transport environment with the means score of 3.78
- (8) Existing walking path with the means score of 3.75
- (9) Possibility of walking from public transport or mass transit with the means score of 3.72
- (10) Comparison before and after mass transit existing with the means score of 3.65
- (11) Availability of cycling route with the means score of 3.48
- (12) Opportunity to cycling with the means score of 3.46

The second target group of survey in this study is shop owners, who have business into market. The result of this group can be identified by gender as 68.07 % are female and 31.93 % are male. Percentage of shop owners who responded the survey have 16-30 years old is 15.97% and 49.58 % have 31-45 years old. In additional 27.73 % , 6.72 % have age in range of, 46-60, and more than 60 years old.

The majority type of customers are both local and foreigners 54.62 % . The survey shows result that 26.89 % of the clients are and 18.49% of shops in market gave information as local clients. There are variety type of products are saling in the market , according the result of survey show that cloths and fashions is ranking number one as 42.02 % , handicraft is 10.08 % as same as souvenir. Other products ,such as food and beverage is 7.56 % , home and decoration is 9.24 % , jewelry is 5.04 % , plant is 4.02% , and mixed products (glasses, leather, pet) is 11.76 % . Up to 34.45 % of shops run business more than 15 years, 10.92 % open their business in the market for 11-15 years, the businesses are runing between 6-10 years is the third ranking as 28.57 % . The busineses are runnign between 1-5 years is 17.65 % and the new business that are open less than one year is 8.40 % .

The result of survey can be explained by 59.66 % of the shop owners who responded said they traveled to market by using private cars. In addition, using Tuk Tuk and taxi is 11.76 % of the respondents. Result from the shop owners survey can show 21.01 % of this group used public transport as a mode of traveled to market. There were small number of shop owners travel to market area by using motorcycle and walk as 4.02 %, and 3.36 % that show in figure 4.

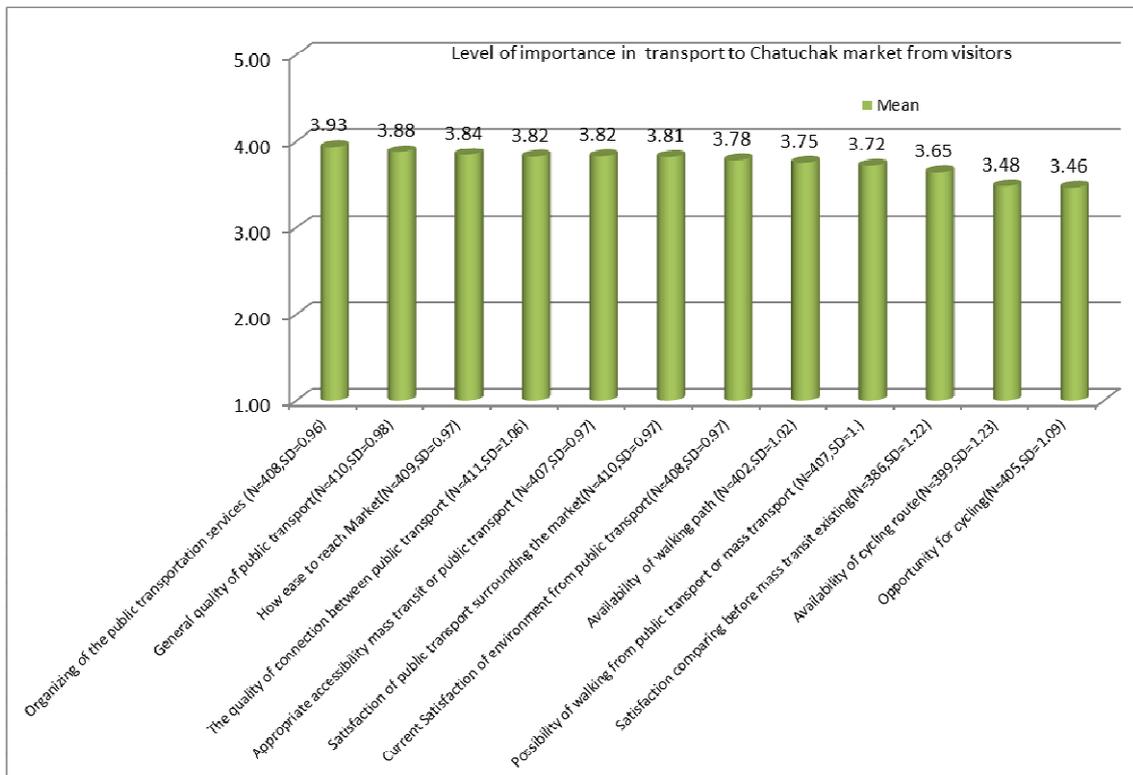


Figure 3 Level of importance in transport to Chatuchak market from visitors

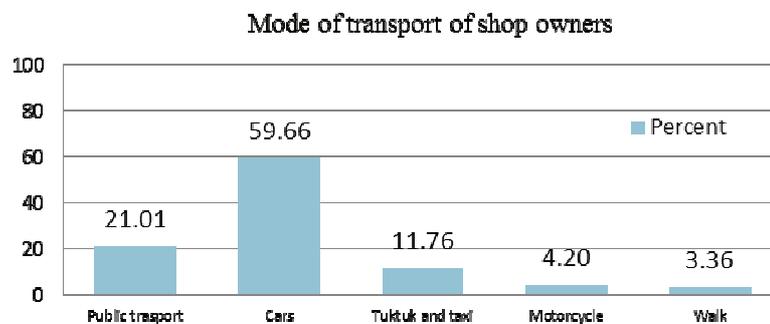


Figure 4 Mode of transport of shop owners

For 47.08 % of shop owners who responded in this survey used mass transit and public transport including public services for delivering or transferring their product. However, up to 52.92 % never used optional of transport modes to deliver their products. For the respondents who used optional transport modes to deliver their products can be defied as up to 60.71 % have been used mass transit (BTS, MRT) and 39.29 % have been used public transport including public services (busses, vans, Tuk Tuk) as show in figure 5.

Figure 6 can show the time comparison of shop owners by delivering goods as an optional delivery travel mode, the result could show that 74.29 % , the owners think using public transport faster than using car for their delivery.

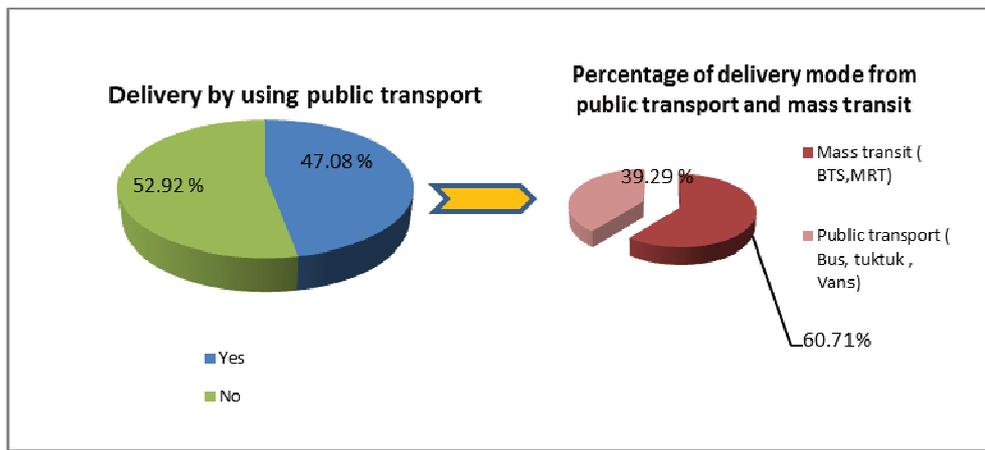


Figure 5 Delivery of shop owners by using public transport and mass transit

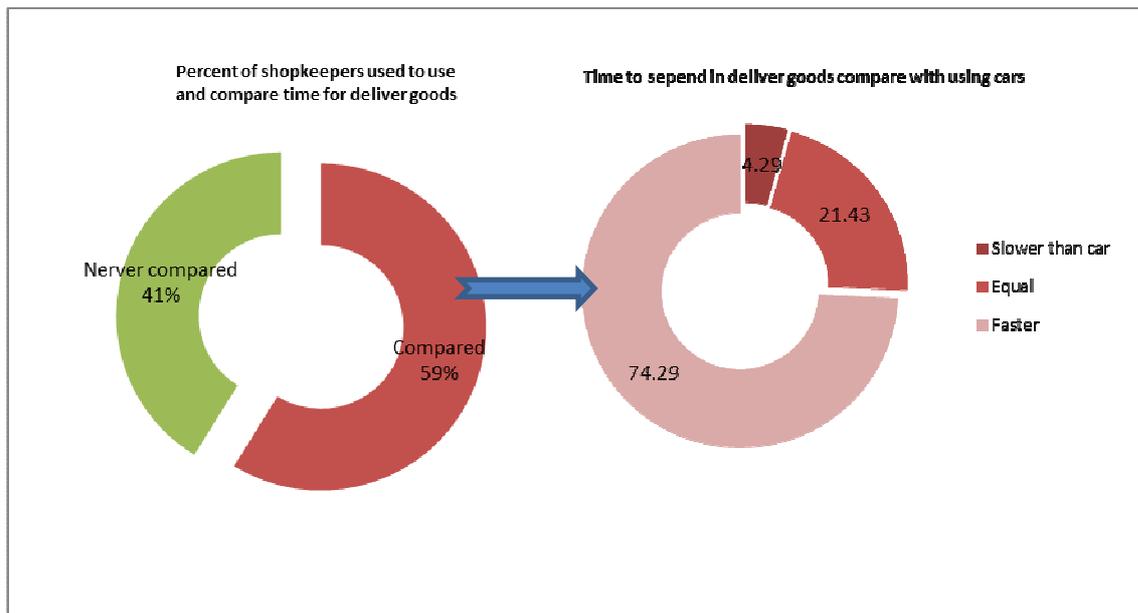


Figure 6 Shop owners compare time for optional delivery travel modes

The shop owners also were asked about the satisfaction of 9 principles and how they think about the importance issues that can be engaged the transport for accessing the market in 9 practical issues. The importance variables were linked to the public transport intensity and existing infrastructure which related to transport surrounding the market and the most favored mode of travel that they use for get into the market.

The level of satisfaction in transport from shop owners of market are 1 to 5 , 1 is not satisfy , 2 is little satisfy, 3 is satisfy , 4 is very satisfy and 5 is absolutely satisfy, these factors can be ranked from the highest means score to the lowest means score show in in figure 7 as followed:

- (1) The quality of connection between public transport around the market with the means score of 3.66
- (2) Current public transport and environment with the means score of 3.63
- (3) Appropriate accessibility on mass transit or public transport with the means score of 3.61
- (4) Satisfaction on goods deliver before and after mass transit exist with the means score of 3.55
- (5) Possibility of walking from public transport or mass transit with the means score of 3.48
- (6) Availability of walking path with the means score of 3.45
- (7) Satisfaction on travel to market comparing before mass transit existing (in case had experience) with the means score 3.30
- (8) Availability of cycling route with the means score of 3.14
- (9) Opportunity to cycling with the means score of 3.08

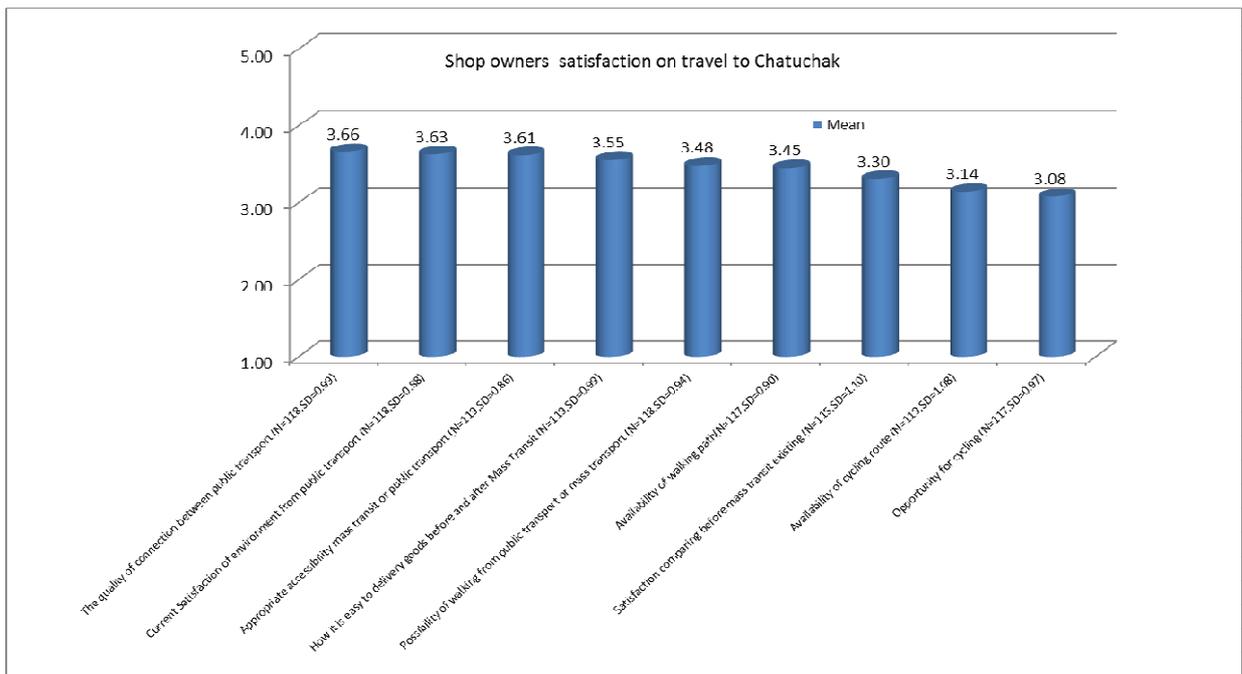


Figure 7 shop owners satisfaction on travel to Chatuchak

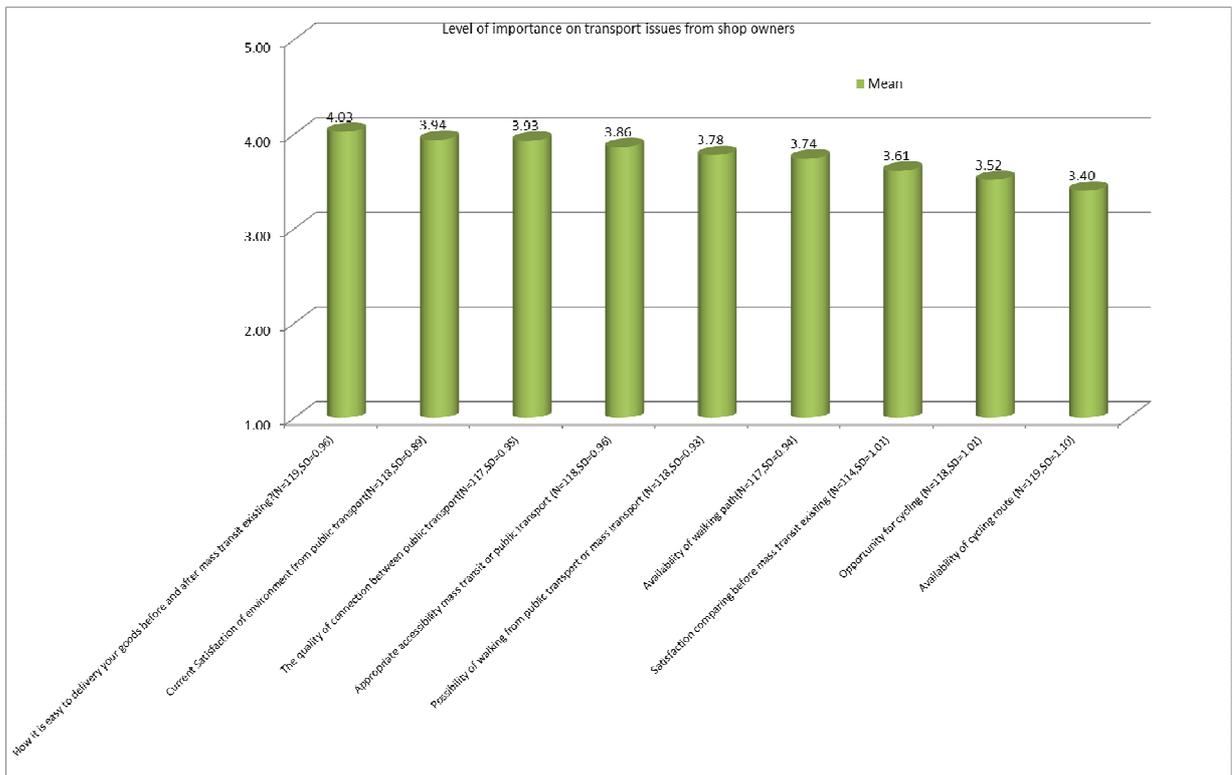


Figure 8 Level of importance on transport issues from shop owners

The level of importance in transport from visitors of market, these factors can be ranked from the highest means score to the lowest means score show in figure 8 as followed:

- (1) Delivery systems before and after mass transit exist with the means score of 4.03
- (2) General environment from public transport to the market with the means score of 3.94
- (3) The quality of connection between public transport around the market with the means score of 3.93
- (4) Appropriate accessibility mass transit or public transport to the market with the means score of 3.86
- (5) Possibility of walking from public transport or mass transit with the means score of 3.78
- (6) Availability of walking path with the means score of 3.74

- (7) The convenience compared before mass transit existing (in case had experience) with the means score 3.61
- (8) Opportunity to cycling with the means score of 3.52
- (9) Availability of cycling route with the means score of 3.40

6 DISCUSSION

The mobility of all types of vehicles use a lot of energy and burning fossil fuels which can be produced smoke and noise and created effect on local environment and quality of living of people who live in the mega city like Bangkok. In the tourism business, transportation has been playing an importance role for engaging business and impacts of pollution on the environment and visitor's decision making. The good public transport and connecting systems can be impacted to the tourism business, for saving time, reducing the pollution and convenient life. There are few general comments of visitors who visit to Chatuchak market that need to be discussed on the tourism promotion for this market. Taking taxi from home to destination can be convenient transport modes for people who not travel alone. And when make cost comparison with mass transit has no diferent. The weather conditions such as hot climate, raining days also are the factors of traveller's decision. For the visitors who travelled by public transport has common comment as they are prefer travel by free busses system. This free buse system had been promoted by government for their saling point during the election period particular in the Bangkok area.

The use of sustainable and non - motorized transport modes surrounding market area may elevate the environmental awareness and increase the tourism business surrounding and in the market. However is not easy to implement due to the car oriented business and the big city like Bangkok. Nevertheless, as the recent economic crises, sustainable transportation and car free environment seem to be meaning more and more particular for the urban area. That could be right time for the changing paradigm of transport planners or city planners. The implementation of non-motorized transportation can be integrated as a part of the sustainable urban planning shows in figure 9. Car free environment in the area could be the one of topic that can be making Chatuchak market much more attractive and unique.



Figure 9 bicycle path along Kamphaeng Phet 3 road

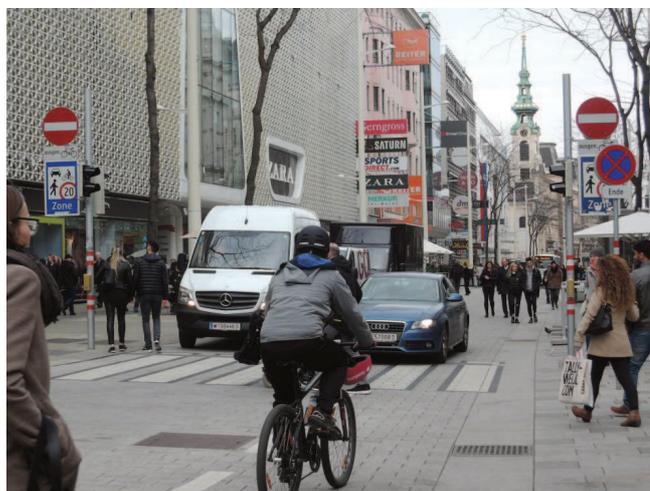


Figure 10 Shared space on Mariahilfer Strasse, Vienna, Austria

As some European cities have dedicated road to be shared space and focus on designing networks in neighborhood areas, focuses on linking with existing road infrastructures by improving non-motorized quality. These can be achieved by example of implementing European model as car free environment on the transportation design. Lesson learned from Mariahilfer Strasse, the famous shopping street in Vienna shows as the implementation of shared space concept in area has a positive feedback. (vienncouver.com, 09-07-2017)

The decision will be an opportunity for the designed stages and development of motorized as well as non-motorized facilities including the layout of buildings and infrastructures. Most European cities give priority on non-motorized on certain streets and intersections when designing green phases at traffic model. Some one-way streets have been transferred into two-way streets for non-motorized, moreover non-motorized modes are exempted from many turn restrictions for cars. (M. R. Mat Yazid, R. Ismail, R. Atiq, 2011).

7 CONCLUSION

Famous travel mode of Chatuchak market visitors is public transport up to 62.77% according survey result, for the shop owners, travel by car up to 59.66% show in survey result. Both target groups are satisfied in the public transport and mass transit systems surrounding the market. Transportation systems around the market have been improving all the time by promoting the mass transit systems and public transports that can make Chatuchak market much more attractive as a hub of shopping area in Bangkok. The car free environment such as building the bicycle lanes is still want to make it better and running in well function. Making more attractive for cyclist who want to use bicycle around the market and its connection points are also can be developed in the future.

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