

# **USER PERCEPTIONS OF EXPRESS BOATS IN BANGKOK**

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## **ABSTRACT**

Waterway can be one of the alternative modes for travelers to avoid the traffic jam on the road. However, in the development of transportation sector in many developing countries, this transportation mode has less attention for improvement and development. Bangkok is one of the notorious cities in Asia in terms of traffic jam. Even with the operation of rail mass rapid transit such as BTS Skytrain and MRT system, the traffic congestion is still persistent. This paper tries to look back at the old history when the waterway, as a transportation mode, was the backbone for traveling. The study focuses on the services provided by express boats that operate along the Chao Phraya River in Bangkok. Questionnaire survey and interview were conducted to users of express boats along Chao Phraya River to examine the characteristics of the express boat users and their perceptions on the services. It is attempted to bring out the factors that are considered important from the user perspective based on their experience in using the service. On the overall assessment, majority responded positively on the available services even with its limitations. Constraints related to the operation of the express boat service were also discussed in the paper.

*Keywords: water transportation, waterways, express boat, sustainable transportation, Bangkok, Chao Phraya River*

## **INTRODUCTION**

In the development of passenger transportation sector, in many cases, waterway has been treated as a stepchild. Although historically water transportation was one of the major transportation modes in carrying people from one place to another, but over time it has been gradually overlook. Transportation development has been concentrated heavily on constructing new roads and other land transportation facilities. With this situation, it is understandable that there are only limited research papers discussing issues related to passenger water transportation.

Bangkok, as the capital of Thailand, was previously known as the Venice of the East because of the popularity of waterway system at that time. The waterway system was based on thousands of miles of network canals known as *khlongs* around Bangkok with the main stream along Chao Phraya River. Most commuting activities were conducted by boats. Water transportation was the main transportation means. People also preferred to build their homes on stilts along the riverbanks and in boathouses (Korff, 1986). The residential area was densest along the riverbanks and sparser elsewhere. Thai culture and living standards and needs were naturally based on the provisions from the river so the river had significant influences on everyday life (Rujopakarn, 2003). More canals were excavated to extend the network. However, the glory of water transportation was an old story. It was more a decade ago before the land transport gains its popularity. With the rapid development of land transport infrastructures, boats were quickly replaced by the more speedy road-based transport system, such as the rickshaw which started running in 1871, then the horse-drawn tram in 1888 (Rujopakarn, 2003). The role of the canals in transporting people had been gradually decreasing and replaced by roads. Consequently, many *khlongs* have been filled in to provide spaces for the road. The invasion of motorcars in 1902 could be considered as the climax where road transport became more and more popular and has developed Bangkok into an automobile dependent city without realizing it (Rujopakarn, 2003).

Nowadays, Bangkok has the full spectrum of public transportation modes. Public buses and vans operate everywhere in the city. Taxis are abundantly available in the city since the

deregulation of taxi industry in 1992. The availability of public transportation couldn't ease the notorious traffic congestion that has been attached to the city. It seems that the increasing number of private cars on the roads couldn't be hold anymore. The provisions of mass rapid transit such as the Sky Train (BTS) and the subway (MRT) in the city center could not provide any significant reduction in the congestion. In the effort of achieving sustainable transportation, the construction of more roads is not the solution. Other alternatives should be sought. The waterway can be a good potential alternative to help alleviate the traffic load as the network along Chao Phraya River passes on high density population in the center of the city. However, as the first stage, it is important to understand the current stage of the water transportation services available along the river. This article tried to provide the answer by focusing on the express boats as the main travel mode along the river. The characteristics of the users are evaluated. Examinations on the user's perceptions of the service are carried out and recommendations for improvement are proposed.

## **EXPRESS BOATS ON CHAO PHRAYA RIVER**

Chao Phraya River is the main river in Thailand. It stretches 372 km from Nakhon Sawan Province in the north to the Gulf of Thailand in the south through the middle of Bangkok. The river is an important transportation artery for all water-based modes.

In general, there are three categories of water transportation operating along the river: private, rental/chartered and public. Express boats are in the last category with regular services which means that they have fixed routes and schedules. The express boats were operated by Chao Phraya Express Boat Co., Ltd. under the concession from the Marine Department. The boat's operation stretched from Pakkred in the north to Ratburana in the south covering 38 piers with distance more than 21 km. Figure 1 displays the routes of the express boat.

There are four categories of the express boat based on the colour of the flag attached on the boat: the local line (without flag), Orange flag, Yellow flag and Green-Yellow flag. The local line stops in every pier along its route. The colour flag boat only stops on certain main piers along its route. Previously, the company also operated Blue flag boat connecting Nonthaburi Pier in the north to Sathorn Pier as the central pier with only one stop at the Wang Lang Pier. However, the operation of the Blue flag boat was halted due to financial consideration. The operation hour of the boat depends on the class of the boat, weekdays or weekend and peak or non-peak hours. However, in general, the boat operates from 05.50 to 19.00 hrs. The headway was around 5-10 minutes during peak hours and 20 minutes for off-peak hours.

The daily ridership of the boat is approximately 35,000-40,000 passengers and on average. The capacity of the boat is ranging from 60-150 passengers depending on the colours of the flag. Orange and Green-Yellow flags have capacities of 60 passengers. The local line boat can accommodate 90 passengers, while the Yellow flag boat has the largest capacity with 150 passengers. The fare for the local line ranges from 9-13 Baht depending on the distance, while the fares for the Yellow and Green-Yellow flags vary from 18-27 Baht and 12-30 Baht, respectively. The Orange flag boat operated under a flat fare of 13 Baht regardless of the distance.

## **DATA COLLECTION**

A questionnaire was designed to inquire information from passengers in two aspects: i) the characteristics of the passenger (socioeconomic, purpose of trip) and ii) the perception of the

current service. The survey was conducted on the weekday in April 2008. Questionnaires were distributed to passengers of the express boat who were waiting on the piers. Whenever time allowed, brief interview was also conducted to the respondents to gain additional information or insights about the service and operation of the express boat. In total, 50 valid responses were collected from the survey.

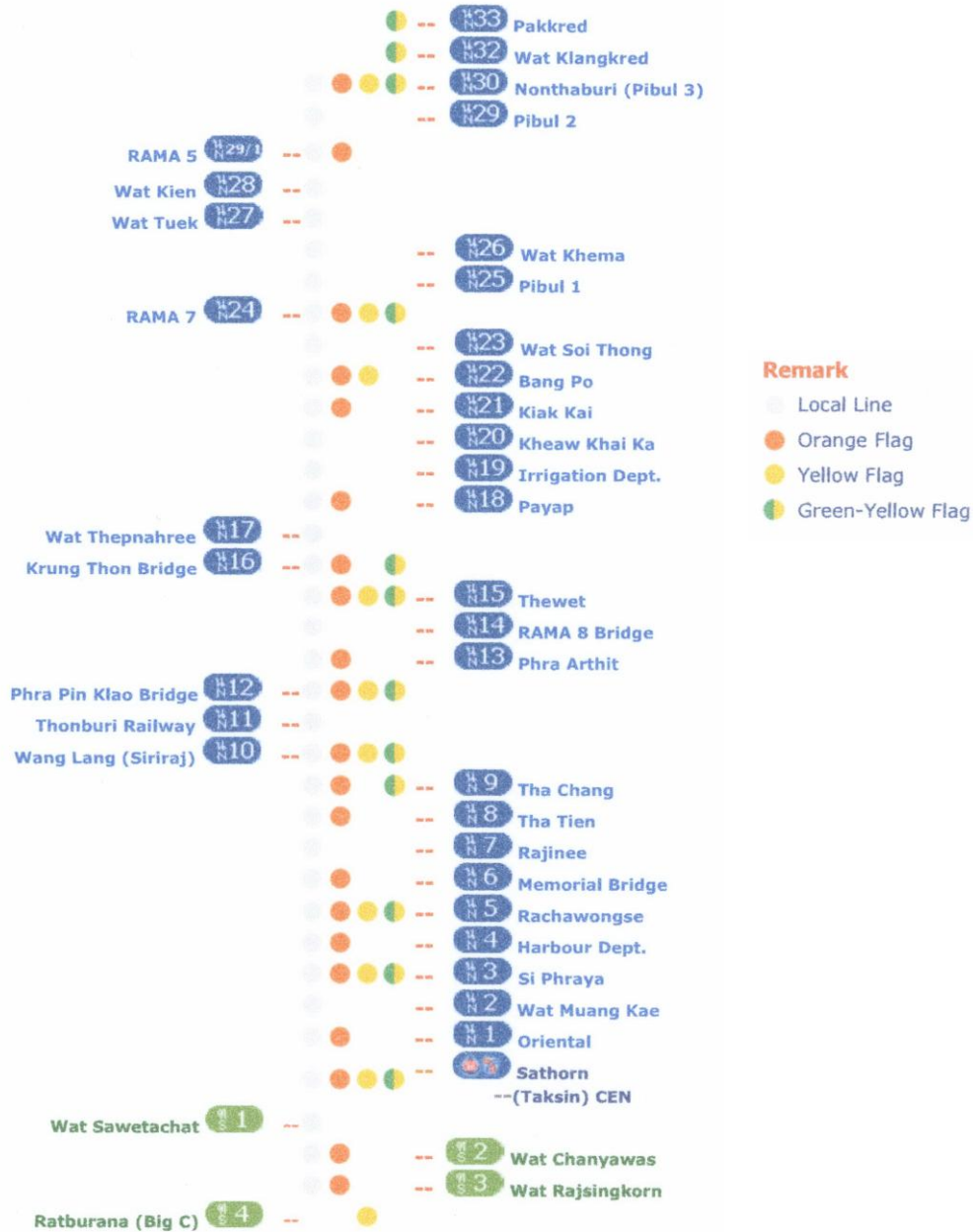


Figure 1 – Routes of express boats

## CHARACTERISTICS OF USERS

The ages of the respondents varied in the range of 15 – 73 years old with majority between 20 and 40 years old. The female respondents represented almost 60% of the total

respondents. In terms of highest educational level, only less than 20% had education up to senior high school. A fraction of 4% had vocational training (non-degree education). Surprisingly, two third of the respondents were bachelor degree holders. The remaining even had education higher than undergraduate level. The occupations of respondents were displayed in Figure 2. Majority were students and government employees with shares of 36% and 22%, respectively. When the results of highest education achievement and occupation of respondents were compared, there was a strong indication that some respondents may misinterpret the highest educational level as the current educational status when filling the questionnaire. Nevertheless, the result still indicated that express boats could attract people from all levels of education.

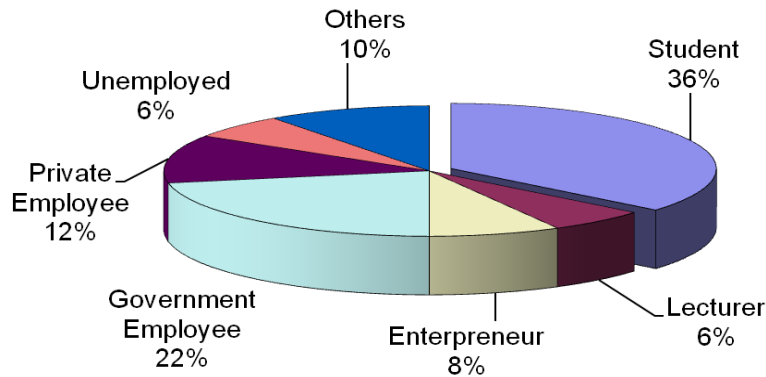


Figure 2 – Occupations of respondents

Although the express boat can attract passengers with diverse educational background, it was not the case for income level. As shown in Figure 3, almost 60% of them were from low income class with monthly salary/allowance not higher than 15,000 Baht (around US\$ 450). Only a small percentage (8%) came from high income class. However this high income class passengers are mainly foreign tourists where their countries are most likely have higher economic and income standard than Thailand.

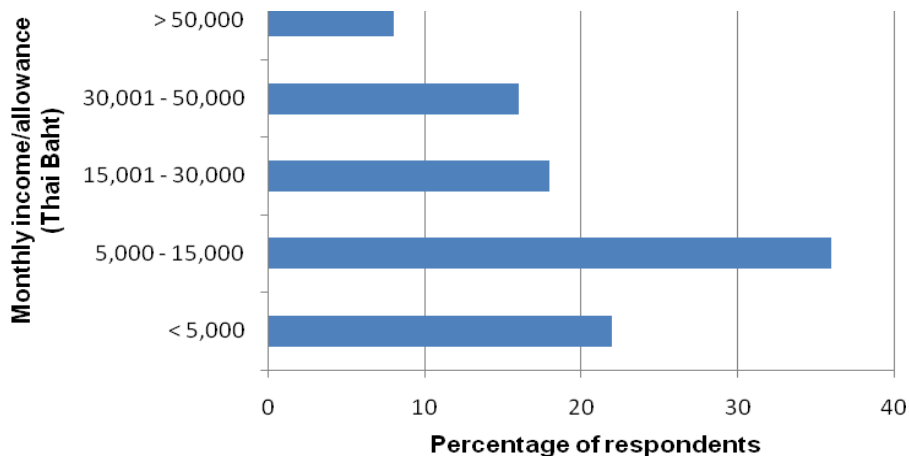


Figure 3 – Monthly income of respondents

Work, study and recreation were the dominant purposes for the express boat trips. These three purposes contributed close to 70% of all trips. Work trip was at the top with percentage slightly higher than the other two which share the same percentage (22%). Most passengers

of the express boat were not residing nearby the pier as three-fourth of them needed to use another mode to reach the pier.

## PERCEPTIONS OF SERVICES

The express boat of the local line has a minimum fare of 9 Baht (around 30 cents). This fare is slightly higher than the flat fare for non-air conditioner bus at 7 Baht (around 20 cents). However, this difference may not be significant as more than half of respondents agreed that the boat fare was appropriate. Almost 40% of respondents even thought that the fare was relatively cheap. Therefore, the boat fare was not considered as an issue or even relatively cheap comparing to the services or benefits that passengers can gain from using the boat.

Although the boat fare was considered suitable or even cheap, this aspect was not the main reason for passengers in using the express boat. Travel time and comfort were the two main attributes that attract people to use the express boat. Financial consideration and environment shared the same weight at the third place. The result is presented in Figure 4. The selection of travel time and comfort as the first two reasons for the popularity of the express boat was not a surprise considering that the express boat did not face traffic jam problems like other land transportation modes. People can save time by using the express boat than the public bus or private vehicle to their destinations. For comparison, travelling from Sathorn, the central pier to Pakkred, the most north pier by the express boat took around half the time travelling by the public bus. The evaluation on the waiting time also supported this by showing that almost three-quarters of respondents considered that the waiting time was reasonable. Only less than 10% considered that the waiting time was too long.

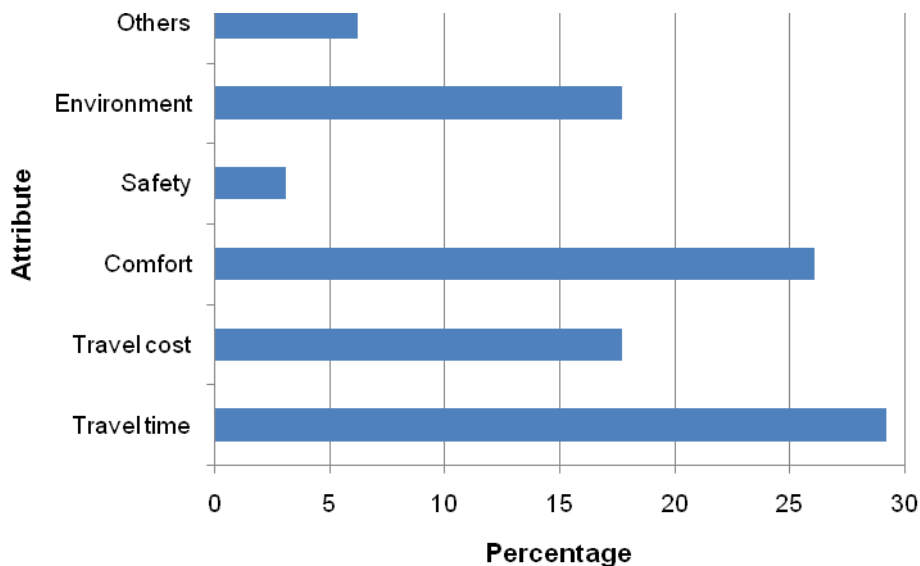


Figure 4 – Attractiveness of express boat's attributes

As shown in Figure 4, safety was considered as the least attractive attribute for the express boat although safety observations on the boat showed that the express boat is equipped with safety facilities. Life jacket was available under each seat. Lifebuoys were also available hanging on the roof of the boat for standing passengers in case of emergency. Detailed inquiry on the safety aspect of the express boat from the questionnaire showed that half of respondents considered that the express boat was not safe enough. On the other hand, 34%

considered that the express boat was safe enough at its current service, while the remaining had no comment on this aspect. Interviews and observations on the site provided additional information on this issue. In each pier, the boat usually stopped only a few seconds so when the boat starts approaching the pier, passengers have left their seats to the rear side of the boat to be ready to get off. In most cases, even before the boat has fully stopped and when the gap between the boat and the pier is not so far, some passengers tend to jump to the pier. This practice may be good in reducing the travel and waiting time. Additionally, sometimes when approaching the pier for a stop, the boat hit the pier quite hard so it was, in fact, a risky way with a high probability for accident.

The overall assessment of the express boat showed a positive respond as illustrated in Figure 5. Only 10% considered that the service was poor. Certainly, improvements are necessary as majority of respondents (46%) gave only moderate assessment toward the system even though a big portion (38%) was satisfied with the system. Accessibility to the piers may not be a problem as almost all piers have connection route with the public bus (only two piers have no connection). One pier, the Sathorn Pier (central pier), even has connection to the BTS Sky Train (Saphan Taksin Station).

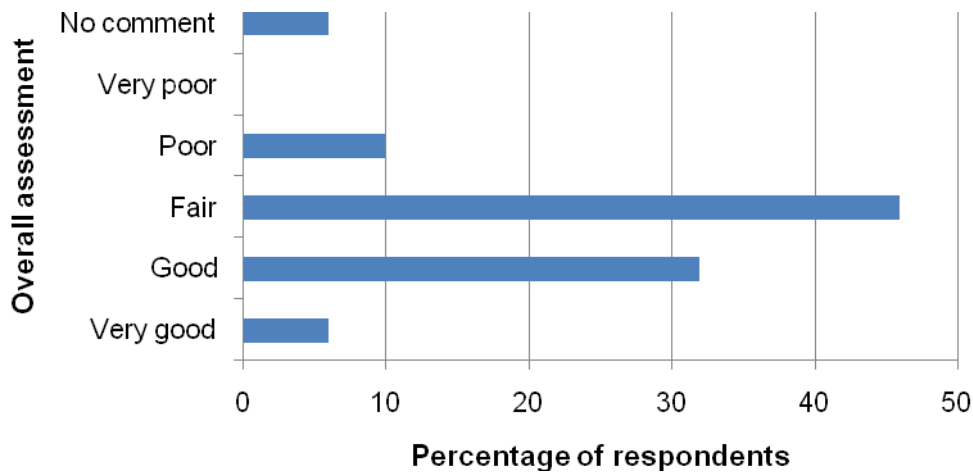


Figure 5 – Overall assessment of the express boat

## CONSTRAINTS AND IMPROVEMENTS

As all flags of the express boat is not equipped with air condition, the air circulation is mainly from the open window. This is a major constraint for the express boat during the rainy days. The boats mostly do not have sufficient protection against the rain shower so passengers also reluctant to use the boat. Safety factor is also another issue as heavy rain causes low visibility. Therefore, the number of passengers reduces significantly. In anticipation of the low demand, operator may reduce the frequency of the boat operation causing longer headway than usual.

Night time is also another major problem for the express boat as the visibility in operating the boat mainly relies on the sunlight. There was no light provided along the river so relying on the boat's light is not sufficient to operate safely. This is a disadvantage of the waterway transportation compare to road transportation.

It is true that almost all piers have link to the public bus. This is one factor of accessibility that can be an attractive point. However, it should be noted that many accesses to the pier are mainly through public markets where the situation (wet, smelly, narrow, and dirty) is surely not as attractive as the access way to rail stations. Accesses to some of the Skytrain stations are linked from major shopping centers or big hotels through what they call it 'skywalk' (clean and wide). Of course, it may not be an attractive option to build a big shopping center nearby the river with whatever reasons (as there is none). However, there are many big hotels built along the river but there is no 'riverwalk' to the pier. If the waterway transportation is projected to be a good alternative of transportation and targeted to attract more middle class people, this issue surely worth to be considered.

Referring to the safety concerns discussed in the previous section, the inquiry on the improvement also put safety on the top list (48%). This strengthens the needs for better safety provisions, measurements and evaluations to improve the service and performance of the express boats. Although waiting time was generally accepted as reasonable, more frequent service of the express boats by increasing the number of boats or trips was still expected. This improvement was positioned in the second place supported by 32% of respondents. Other improvements such as punctuality and boat fare received only marginal attention from respondents with each aspect got as high as 10% supports.

## **CONCLUSIONS**

Historically, waterway transportations contributed significantly in the development of one area. It had important role in transporting people and goods from one place to another. However, since the invention and development of road transportations, waterway transportation has been overlooked. As road transportations, mostly in developing countries, now face problems with congestion, reviewing and reviving the water transportation can be a good option. Express boats as the main transportation modes along Chao Phraya River in Bangkok offer the ease of commuting for Bangkok residents as an alternative mode to avoid congestion on the road. This article examines the services of the express boats based on its user's perceptions. Questionnaire survey was conducted to passengers of express boats in April 2008, followed by brief interview.

The patronage of express boats was not constrained to low educated people. Many have higher education background. Students were the biggest share of users (36%) followed by government (22%) and private (12%) employees. However, most of them were from low income class category. Work, study and recreation were the three main trip purposes of the users. Majority of them need another transportation mode to reach the pier suggesting that the express boat is part of the intermodal travel to the final destination.

The fares of express boats were not an issue as almost 90% of respondents considered that the fare was either appropriate or cheap. However, this was not the key reason for patronage. Travel time and comfort were considered as the first two reasons users choosing the express boat as their mode. The survey also indicated that safety was a concern in the express boat's operation. In line with this, safety improvement was positioned as the first priority for the improvement of service suggested by respondents. More frequent service of the boat was another important improvement that should be considered. Rain and night time are two natural constraints in the operation of the express boat. Improvement of accessibility is also necessary to attract more passengers from higher economy classes. For the overall assessment, more than three quarters of respondents indicated positive response about the service of the express boat. However, improvements were still necessary as majority assessment were only moderate.



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