Assessment of the taxi service in Doha

Khaled Shaaban [a,*], Inhi Kim [b,1]

[a] Dept. of Civil & Architectural Engineering, College of Engineering, Qatar University, Qatar
[b] The Institute of Transport Studies, Dept. of Civil Engineering, Monash University, Australia

A R T I C L E   I N F O

A B S T R A C T

This research focuses on passengers' satisfaction of the taxi service in Doha, Qatar. Qatar is a rich developing country where taxis are widely considered as a public transportation service due to the limited use of the existing bus service and the profoundly dominant use of private car by expats and Qatari locals. The main objective of this research is to identify the quality attributes of the current taxi service. A descriptive analysis relating the demographic, accessibility, and trip purposes to taxi users in general in Doha with overall service satisfaction was conducted. A Structural Equation Model was used to assess the taxi service attributes that influence the users' perceived satisfaction. Two models were developed: one was a relationship between the demographic and satisfaction of the users while the other was between the trip time and the satisfaction of the users. The first model supports the premise that income is the greatest attribute in the demographic followed by marital status, age, and occupation. On the other hand, the latter model demonstrated that waiting time is the most contributing variable among the times spent by taxi users followed by walking from work to a station, journey time, and walking from home to a station.

1. Introduction

Taxis have covered the gap between private and public transport in time and space although they are generally evaluated based on the performance index used for bus services. An implication of public transport is generally associated with a government where all transit plans, operations, and the most important investments are made. In many countries, taxis are owned and operated by private companies. In some cases, those companies benefit from subsidies that a government provides in order to maintain their service quality. When it comes to privacy, a taxi ensures more privacy than a bus, but less than a private car. In terms of pre-defined schedules or routes, a taxi has more flexibility than a bus by providing a door-to-door service. This also distinguishes a taxi from public transport that can be represented by a bus.

Many experts have regarded taxis as public transport and part of a city's major transport master plan. For example, Viegas (2008) said that "Taxis are a form of public transportation found throughout the world". Aarhaug and Skollerud (2014) also added that, "Taxis provide a point-to-point service available to the public and as such a part of public transport".

Since taxis are regarded as one of the public transport modes, public transport organizations have paid much attention to operations of a taxi service. In 2010, the Queensland government in Australia published a report stating, "Taxis form a critical part of the public transport network, providing flexible responsive 24 h service at relatively little cost to the taxpayer" (Plan, 2010). In order to keep a high quality public transport service, customer satisfaction surveys have been widely used in many countries. In addition, public transport organizations need to prioritize which sector needs to be allocated a limited budget

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* Corresponding author. Tel.: +974 4403 4185; fax: +974 4403 4172.
  E-mail addresses: kshaaban@qu.edu.qa (K. Shaaban), inhi.kim@monash.edu (I. Kim).
[1] Tel.: +61 3 9905 9627; fax: +61 3 9905 4944.

for a taxi service. Therefore, investigating how customers feel about public transport systems plays a pivotal role in identifying the most influential factor to keep customers happy and to encourage private mode users to use public transport.

A successful implementation of a taxi service has been made in Quebec, Canada (Trudel, 1998). The taxi service is considered as a complement or a substitute for regular transit services. In order to minimize the financial loss of the regular transit services in Quebec, Canada, several regulations were agreed. These included, (a) connections between home to a bus terminal or a railway station, (b) operating during non-peak times within a municipality only, (c) providing services to areas where a regular transit service cannot be accessed, and (d) providing mobility services to the handicapped and to groups previously organized by a third party. The service was well-designed which resulted in wider accessibility and a choice for customers, and in gross revenue for taxi operators.

However, not all of the cities identified have the same factors. Fellesson and Friman (2012) investigated perceived service satisfaction by collecting survey data from eight European metropolitan cities: Stockholm, Barcelona, Copenhagen, Geneva, Helsinki, Vienna, Berlin, Manchester, and Oslo. As expected, there were differences in perception towards public transport. They also found that public transport satisfaction relied heavily on the city's public transport infrastructure and technology. This indicates that each local government needs to address its own public satisfaction evaluation criteria. In particular, Doha is a city where most locals do not have any concept of public transportation as it has not existed since in their lifetimes. Buses are mainly used by laborers in construction areas or people with low incomes who cannot afford taxis or to buy their own cars. Even tourists normally hire a taxi with a driver or use a specialized tour bus called the "Doha Bus" that stops at the most attractive destinations only. Therefore, it is not an exaggeration to say that taxis are the only public transport for locals and expats in Doha.

In many Middle Eastern countries, locals are not permitted to consume alcohol in public, but expats are allowed to drink in designated places, normally in hotels. In response to that, a zero-alcohol tolerance policy is practiced in Qatar when driving. If one breaks the law, he or she faces a heavy fine or even jail for a month to perhaps years depending on the magnitude of alcohol consumption. This social acceptance discourages people from driving when they have had alcohol and encourages the use of taxis.

In addition, the bus service coverage of Doha is limited. Currently, 27 internal bus lines run within Doha city and 14 external bus lines connect Doha to other remote cities. Bus service frequency varies from 30 min to 1 h, which seldom attracts those on higher incomes to use the bus services. Due to the infamous traffic congestion in Doha, buses often do not arrive at stops on time, particularly during rush hours. Thus, taxis are used more as a means of transportation than buses.

However, some restrictions apply for using the taxi service in Doha. For example, the city is expanding rapidly but has not been well-planned. Apart from the City Centre (CBD in Doha), other attractions, business destinations and shopping malls are widely dispersed. Therefore, taxis do not look for passengers on the streets randomly: passengers either go to a taxi waiting area or call a taxi to pick them up. Moreover, arterial roads connecting these major destinations are used by many other vehicles sometimes traveling at high speeds and do not let taxis stop at the edge of streets to pick up passengers.

Another point to consider is that although economic regulations such as price and quantity restrictions are practiced to control taxi demand and supply, social regulations including safety and security, maintenance requirements, and drivers' training are hardly considered. Qatar plans to increase the number of taxis to a total of 7000 until the FIFA World Cup in 2022 to accommodate tourists and locals. In order to match the supply of the expected demand, some taxi drivers are hired without strict control processes as it is in a city like New York (Çetin and Eryigit, 2013). For example, job agencies advertise to hire taxi drivers with simple documents such as age certificate (normally 23 years and above), bio-data, driving license (2 or 3 year old license generally from India), passport information and no educational level is required. Since corruption in obtaining a driving license is widely practiced in some developing countries including India (Bertrand et al., 2007), the quality of the taxi service cannot be guaranteed. Although most cities have economic regulations in order to restrict entry and control taxi fares, cities like Doha and Istanbul are not seriously concerned about social regulations (Çetin and Eryigit, 2011).

Despite the fact that the taxi industry plays a critical role in meeting public transport customers' needs in many other cities as well as in Doha, little attention has been paid to comparing this type of service to other public transport models. This paper presents the aspects that attract public transport users to use taxis using structured equation modeling (SEM). Many variables, categorized as contributing factors, such as taxi, taxi stop, and taxi driver, were investigated to show how they influenced customer satisfaction. This study particularly provides policy makers and city planners with a comprehensive insight into keeping or upgrading taxi services in their regions where taxis are the main means of public transport.

The papers consist of six chapters, beginning with the above introduction. Past works that have been conducted to analyze public transport satisfaction with various methodologies and SEM, which is mainly used in this paper, follow. The following section describes data collection from current taxi users in Doha, Qatar as a case study. These taxi users' characteristics and general satisfaction data are analyzed to extract the general ideas. Then a SEM is developed based on the survey data from this study. After that, the results from the SEM are interpreted to show how latent variables influence customer satisfaction in the taxi service. Lastly, a discussion and conclusion section summarize the findings and discuss the implications of this study.

2. Past work

Del Castillo and Benitez (2012) evaluated customer satisfaction towards the public transport system in Spain by collecting a survey of 1508 transit users. Eight major indicators including connectivity, accessibility, information, time satisfaction, user