THE CRITERIA OF RAILWAY STATION IN MALAYSIA: A REVIEW OF ISSUES IN FACILITIES IMPROVEMENT

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ABSTRACT: *Malaysia flourished with the development of the transformation of urban public transportation such as the railway in the Greater Kuala Lumpur / Klang Valley. The rapid development of railway technology in Malaysia has created various rail routes such as Keretapi Tanah Melayu (KTM), Light Rail Transit (LRT), Mass Rapid Transit (MRT), Express Rail Link (ERL), and KL Monorail in Greater KL / KV. Unfortunately, the lack of facilities at the railway station in Klang Valley such as safety and security, maintenance, comfortability, physical facilities, accessibility, environment and more issues cause the user to choose the private vehicle as transport for daily use. Yet, this situation causes traffic congestion in Klang Valley. The purpose of this paper is to identify the criteria of railway stations in a global and local context through facilities management perspective. Therefore, this paper proposes to identify the criteria of railway stations in a comprehensive manner and rank these criteria by applying the conceptual analysis. The results of this paper show the criteria of the railway from the literature review in the global and local context for railway station improvement in quality and satisfaction, especially through facilities management perspective. It is hoped that this paper can give the idea to stakeholders in improving the quality of railway stations, particularly in Malaysia so that it can compete in the international arena.*

Keywords: *Railway Station, Criteria, Transportation, Economy, Social, Facilities*

1. INTRODUCTION

Public transport is a means of transportation provided by the government to the public. It includes several modes of transport such as bus, subway, taxi, train, and ferry [1]. Public transport services must follow a fixed, secure and fast schedule, ensure high service quality, efficient use of resources and meet the needs of consumers [2, 3]. Rail transport is the means of transport of passengers and goods by wheeled vehicles that run on the rails. In Malaysia, railway networks have grown rapidly since its inception in the early 19th century. It has grown in balance with national development. Currently, city rail transit is the most popular means of urban transport, especially major cities like Kuala Lumpur [4]. The rail service has become an important public transport mode in the world when engineers and planners cannot reduce traffic congestion in cities [5].

In Malaysia, there is plenty of public transport such as trains, buses, taxis and rickshaws, including Commuter Train/ Keretapi Tanah Melayu (KTM) [2]. Other than that, Light Rail Transit (LRT), KL Monorail, Express Rail Link (ERL) that consist two lines which are KLIA Express and KLIA Transit was the rail transportation exist in Klang Valley. The lack of facilities at the railway station in Klang Valley such as safety and security, maintenance, comfortability, physical facilities, accessibility, environment, and more issues cause the user to choose the private vehicle as transport for daily use instead to use public transport such as a railway. This is because private vehicles are easy to access from one destination to another. Consequently, this situation causes traffic congestion in the Klang Valley. Hence, this paper will show a variety of criteria that have been studied by previous researchers on public transportation especially the railway stations. The quality and satisfaction level of the railway station in a global and local context will also be discussed from the facilities management perspective.

2. LITERATURE REVIEW

OVERVIEW ON MALAYSIA RAILWAY DEVELOPMENT

KTM Commuter is an operator of heavy-rail public transport that has 53 Stations along 175 km. The network consists of two cross-city routes, route Batu Caves-Port Klang-Sg Gadut, and a shuttle service from Rawang to Tanjung Malim, which started in April 2007 that migration between the two such flows can be done at KL Sentral, Kuala Lumpur and Putra Stations [2]. Then, the KL Monorail service is a city monorail system in Kuala Lumpur, Malaysia. The KL Monorail link is 8.6 km long and has 11 stations. It is one of the components of the Klang Valley Integrated Transit System. Along the journey from KL Sentral station to Titiwangsa station, the KL Monorail connects with the KLIA Transit, KLIA Ekspres, KTM Commuter, Ampang / Sri Petaling line LRT, and Kelana Jaya line LRT train services. There are nine Stations between KL Sentral station and Titiwangsa stations are spaced at approximately 800 meters in the central business district of Kuala Lumpur. The KL Monorail System uses permanently added 2-train, which can accommodate 158 passengers during normal operation. The Kuala Lumpur monorail system opened on 31 August 2003 [6]. The Light Rapid Transit (LRT) consists of the Kelana Jaya line LRT, Ampang line LRT and Sri Petaling line LRT integrated seamlessly into the regular ticket system to form the major component of Greater KL / Klang Valley Integrated Transit System. This train network serves a large part of Kuala Lumpur [6]. In addition, Express Rail Link (ERL) provides two rail services, the KLIA Express and KLIA Transit servicing the Multimedia Super Corridor. In the 10th Malaysia Plan, Klang Valley Mass Rapid Transit proposed, equipped with 3 line system Mass Rapid Transit (MRT) which measures 141 km in the Klang Valley. The Klang Valley MRT will be integrated with existing rail networks such as light rail transit (LRT), Monorail, KTM commuter,

and bus services to form effective and efficient public transport systems [7]. In conclusion, the railway development in Malaysia change time to time for improving the quality of public transportation in urban areas, especially in GL/KV for public users from the government. The facilities management criteria are one of the factors that influence the quality of the station through user satisfaction. In the next topic will be to discuss facilities features in the railway station at Klang Valley and the facilities management criteria in a global and local context to improve the railway station quality from the previous researcher.

MALAYSIA: FACILITIES FEATURES IN RAILWAY STATION AT KLANG VALLEY

In this part will review some of the facilities that provide in the railway station in Klang Valley as mention below in this research and based on literature.

KTM Commuter is a commuter train services brand in Malaysia operated by the Keretapi Tanah Melayu (KTM). It was first introduced in 1995 by providing local rail services around the city of Kuala Lumpur and suburban areas around the Klang Valley. The KTM commuter is able to move at the highest speed of 175 km (109 mi) with the route connected to 45 stations altogether. It consists of two projections, namely the Sentul-Port Klang and Rawang-Seremban routes, as well as the shuttle service from Rawang to Rasa. The train used is a type of double electric unit and is air-conditioned. The 'Park & Ride' facilities are also available at the station for nominal payments to all passengers. KTM commuter is designed for the comfort and safety of Lady Passengers, the designated women's seating area. It is available at KL Sentral KL Sentral on Platforms 3 & 4 and 5 & 6. Labeled for "Coach for ladies only", the area is affixed with an iconic pink sticker. Coaches are equipped with 3-pin power under the passenger seat. There is also a trend above with infrastructures designed for people with disabilities, as well as having special seating available to parents and people with disabilities. Coaches are carefully monitored and continued through the CCTV system to ensure that passenger trips are safe and comfortable [8].

KL Monorail was originally constructed to connect 90% hotels and shopping malls in downtown Kuala Lumpur and became distributors of other public transport systems (Star LRT / Ampang Line and Sri Petaling Line, Putra LRT / Kelana Jaya Line, and etc). The trains have 48 seats and space to accommodate 196 standing passengers. The chairs are fixed in the center of the carriage with standing space provided near the doors. The stations are elevated structures with platforms on the top floor, and ticketing is provided on the ground or first floors. All the stations have CCTV cameras on the platforms, which are separated from the lines with fencing. The depot has storage facilities for off-peak and night hours, two separate buildings with heavy and light maintenance equipment, platforms for interior cleaning and a separate sub-station for depot operations [9].

The ERL is divided into two rail networks, namely KLIA Express and KLIA Transit. KLIA Express is one of the two services provided by ERL. KLIA Express started operating in 2002 and has served over 45 million passengers. This is an endless airport transfer commuting from the International Airport (Kuala Lumpur (KLIA) to KL Sentral; 28 minutes) and International Airport (Kuala Lumpur 2 (KLIA2) to KL Sentral; 33 minutes) [10]. KLIA Transit is a commuter service from Kuala Lumpur International Airport (KLIA) and KL Sentral routes through three quick stops - at Salak Tinggi, Putrajaya & Cyberjaya and Bandar Tasik Selatan. Passengers can ride the train at the peak of every 20 minutes and every 30 minutes during the busy hours [10]. Free porter service will assist passengers by loading and unloading luggage (KLIA and KL Sentral stations), overhead racks for all luggage (all trains) and floor-elevated shelves for big luggage (KLIA Express), 4G WIFI, and information screen display featuring news, weather, entertainment, and travel information for anyone using the KLIA Express [11]. Next, there is a convenient route to connect Kuala Lumpur city center and two major airports, the KLIA Transit train equipped with high-speed Wi-Fi. The train also has plenty of comfortable seating and a retail bar, as well as a spacious luggage storage space.

The Light Rail Transit (LRT) operated by rapidKL consists of Kelana Jaya LRT, Ampang Line LRT, and LRT Sri Petaling. The Ampang LRT Station has five-story complex facilities and provides 1,140 parking spaces, including 144 rooms exclusively for women and 20 for disabled persons as well as 200 motorcycles on the ground floor. The Ampang parking complex is also equipped with art amenities such as parking lane terminal, parking center monitoring system, equipment monitoring system, parking guidance system, error detection system, security camera, panic button for emergency cases and control center for work, management and etc. The multilevel parking system, MyRapid card, is only for the entry and exit with stored value charged [6]. The stations along the Kelana Jaya line LRT is aligned with the north-south direction, mainly from high stops and several underground and grade stations. All stations are equipped with closed-circuit security cameras for security purposes and are built to support disabled passengers, with lifts and wheelchairs as well as escalators and stairs on every floor [6]. In addition, Sri Petaling LRT Station is also a KL fast bus hub for non-U71 truck shuttle bus routes in Sri Petaling, Taman Gembira & Old Klang area. There is also Park and Ride, and the Bike and Ride area available at several stations [6].

ETS, which means Electric Train Service is an intercity rail service operated by the Malaysian railway operator, Keretapi Tanah Melayu Berhad (KTMB). The ETS train schedule in Malaysia is via the route from Gemas - Padang Besar and Padang Besar - Gemas. The train is capable of moving up to 140 km / h (87 mph) with an electrical measuring meter. Therefore, ETS can be classified as higher train service. ETS is a green rail with electricity as a power source. It's clean and has a lower carbon footprint than most types of motor vehicles that burn fossil fuels. ETS also has the ability to reproduce electricity during brakes, for use by other trains in the same power grid. Train passengers can fulfill their time by watching a movie or documentary on the LED screen located at the end of the coach and in the passenger aisle. Coaches are equipped with additional luggage space available in the A & F coach. Special seating for the disabled and elderly located at Coach D; seating is located adjacent to the small room to facilitate disabled

people and the elderly. Coaches are equipped with CCTV systems to ensure safe and comfortable travel. Bistro and musolla are equipped with wudu area in train C. The trainer is equipped with OKU friendly washroom [9].

Construction of the MRT is expected to reduce the traffic congestion in the Klang Valley. Carried out extends the inadequate rail network system. It is estimated that a single 4-car MRT train can carry 1,200 passengers, and equal to the average passenger carrying 700 cars [12]. The station facilities provided are driver buses, escalators, public toilets, retail outlets, parks and travel, bicycle parking, and so on. The train used for the Sungai Buloh-Kajang Route (SBK) is light, constructed with nourishing and non-combustible materials, and has a high life cycle. It uses a very efficient air conditioning system and lighting system to reduce energy consumption. All MRT trains have wheelchairs that have been installed on trains for disabled people walking. There are 58 unmanned trains for the SBK Line. The train speed can reach 100km / h. However, the average speed of the trend operates at 70km / h [13].

MALAYSIA: FACILITIES FEATURES IN RAILWAY STATION AT KLANG VALLEY

There is an indispensable criterion at the railway station for the user from a different perspective of many researchers in public transport. Equipment for passengers at railway stations and stops is one of the key parameters for both effective railway operation and passenger comfort.

In the global context, station facilities provide ticket counters, separate waiting areas, short waiting areas, refreshments, shops and etc. [14]. In addition Paulley et al., [15] defines that station facilities are for vehicle passage, exchange mode, service reliability, information provision, marketing and promotion, multiple buses, changes in other properties with fare and travel time while Pérez, Quintana, and Pastor, [16] profits earned by residents of certain locations from the use of the transportation system. Location design with excellent access is considered to be very relevant for locations near transportation nodes with high-quality connections, such as high-speed train services [17]. Consumer safety should also be stressed by the management to attract people to use the train. The reliability, frequency, comfort, information, driver behavior, and hygiene are some of the criteria for satisfaction of public transport users [18]. Meanwhile, the role of railways is also very important to the culture, sustainable environment, urban renewal, safety and efficiency [19]. The ease of security or safety, reliability, comfort, and behavior of uniform staffing personnel is the main behavior of public transport in major European cities [20]. Previous research has revealed dimensions leading to service quality such as experience management, corporate function utilization, benchmarking activities, competitive work environment, optimization, and better organizational resource planning, and focusing on generating quality output services [21]. Similarly, aspects of engagement, reliability, responsiveness, assurance, and empathy are models for measuring service quality [22]. Paul and Alain, [23] has highlighted the ten-varied quality of public transport services, namely reliability, responsiveness, efficiency, access, courtesy, communication, trust, security, understanding/know-how, and tangibles.

In the local context, priorities for repairs, overhaul and long stock repairs result in reduced overall capability, especially during peak hours and reduce intermediary services. In addition, the level of customer satisfaction is in terms of timeliness (time of arrival), ticketing system, delay time, railway frequency, safety factor, facility and space criteria [2]. Facilities on trains and stations are needed to assist operators in providing good service. Elements that can affect the quality of train services are railway facilities, station facilities, operations, maintenance, and policies. The train facilities will also contribute to the comfort of passengers with the availability of information preparation, trainers, safety, thermal comfort and technical elements during operation [4]. Some research has determined the emergence of a simple service in terms of availability, convenience, and convenience which are needed to assess the perceptions of consumers towards public transport services [24]. There are nine factors selected by Haron, Nasir and Mohamad [25] namely accessibility, reliability, responsiveness, physical convenience, safety and security, understanding, environment, time and fares in train facilities. In terms of rail transport, access to the railway system, transit time, and time used in this service system. Distance traveled for public bus services, as well as buses, transit buses, and travel times are an important factor in tourist attractions [26].

3. RESULTS AND DISCUSSION

Table(1) Criteria matrix table

Criteria	Global	Local
Empathy /assurance	√	
Ticket offices/ tickets system	√	√
Separate waiting areas/ space criteria	√	√
Refreshment points/ stores and shop/ convenience	√	√
Information provision/ communication	√	√
Marketing and promotion	√	
Various bus/changes in other attributes/ transit/ interchanges between moves	√	√
Journey time/ punctuality/ transit time/ delay time	√	√
Accessibility	√	√
Safety and security	√	√
Reliability	√	√
Comfort/ cleanliness/ case of coaching	√	√
Culture	√	
Environment	√	√
Urban renewal	√	
Efficiency/ frequency/ frequency of train	√	√
Staff behavior/ driver behavior	√	
Understanding/ knowing the customer	√	
Railway facilities/ station facilities/ physical facilities		√
Credibility	√	
Tangibility	√	
Responsiveness	√	√
Competence	√	
Operation/ Technical element during operation		√
Maintenance		√
Policies		√
Availability		√

From Table 1, the finding shows the important criteria that have issues for a railway station quality and satisfaction at the station serve in a global and local context in facilities management perspective. In a global context criterion such as empathy /assurance, marketing and promotion, culture, urban renewal, staff behavior/ driver behavior, understanding/ knowing the customer, credibility, tangibility, and competence there is the criteria issues that have stated from previous global researcher but there is not yet discuss from local researcher from the literature review. On the other hand, there are similar criteria's issues in global and local context, however, railway facilities/ station facilities/ physical facilities, operation/ technical element during operation, maintenance, policies, and availability are issues that have been highlighted in a local context. Finally, from this finding, to improve the local railway station quality and user satisfaction, the prospect of facilities management is needed to be stressed out in order to encourage the use of railway stations by consumers, especially in Klang Valley area. The high quality and satisfaction level of public transport (railway station) can improve the quality of life in urban areas. It is hoped that this paper can give the idea to the stakeholders for improving the railway station facilities in Klang Valley and compete with the global arena.

4. CONCLUSIONS

In conclusion, in improving the railway station quality and satisfaction level in Malaysia, there is a lack of study on railway station criteria such as Empathy /assurance, Marketing, and promotion, Culture, Urban renewal, Staff behavior/ driver behavior, Understanding/ knowing the customer, credibility, Tangibility, and competence. These FM based criteria are potential to be an attractive element of public transportation, especially for railway stations in Malaysia.

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