

**Journal of Social Sciences (COES&RJ-JSS)**  
**ISSN (E): 2305-9249 ISSN (P): 2305-9494**  
**Publisher: Centre of Excellence for Scientific & Research Journalism**  
**Online Publication Date: 1<sup>st</sup> April 2014**  
**Online Issue: Volume 3, Number 2, April 2014**  
<http://www.centreofexcellence.net/JJSS/JSS> Mainpage.htm

## **A Theoretical Overview of Public Transport Service Quality: A Focus on Bus and Mini-Bus Taxi Service in South Africa**

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### **Abstract**

With the introduction of the Bus Rapid Transport system in South Africa, existing public transport organisations, particularly buses and minibus taxis, will have to adapt to the changes or else they will inevitably fail. In general, public transport organisations are being forced to move from a traditionally operations-driven orientation to a more market-driven orientation, which means that they need to improve their service quality. In light of the aforementioned, this paper explores the theory of service quality with special emphasis on the dimensions of transport service quality, namely, reliability, assurance, tangibles, empathy, and responsiveness.

**Keywords** Transport; public transport; transport service; service quality.

**Citation:** Govender, Krishna; A Theoretical Overview of Public Transport Service Quality: A Focus on Bus and Mini-Bus Taxi Service in South Africa; (April, 2014); Journal of Social Sciences (COES&RJ-JSS), Vol. 3, No. 2, pp: 301-316.

## 1 Introduction

Public transport is essential to the wellbeing of any nation, and the benefits of a well-planned and efficiently managed transportation system spread far beyond the transport field, as it is essential for industry, for people's mobility and for good communications (Matthews 2013). In South Africa (SA) the minibus taxi industry has an estimated 70% market share, while public buses have a market share of just over 20%, and rail a market share of just over 14%. The state of public transport service in South Africa has given rise to a need to focus on the quality of service provided (Cape Regional Chamber of Commerce and Industry 2011; Johannesburg Press Club 2011).

Public transport must be differentiated from other modes of transport, such as private vehicles, by providing better and superior service than that offered by the other modes, and by making the commuters aware of the service being provided without compromising either convenience or comfort. The question often arises as to the reason why people prefer one mode of transport to another, and surveys have highlighted the crucial and sometimes, overwhelming importance of certain factors which play a role in this decision, which factors may be grouped under the general heading of 'the quality of service' and, include amongst others, the speed of delivery, certainty of timing (reliability and scheduling), freedom from interruption (extent of the service) and safety (Gubbins 1988).

In view of the aforementioned, this paper theoretically explores transport service quality focusing primarily on the dimensions in public transport service quality, namely reliability, extent of the service, comfort, safety, and affordability.

## 2. Service Quality

For more than a decade, academics and practitioners have all been trying to conceptualise and assess service quality, and pioneers of service quality research such as Parasuraman *et al.* (1986) argue that in contrast to the quality of goods, which may be measured objectively by such indicators as durability and number of defects, service quality is an abstract and elusive construct because of the following three features which are unique to services, namely, intangibility, heterogeneity and inseparability of production and consumption. Thus, in the absence of objective measures, a useful and appropriate approach to assessing the quality of a transport organisation's services would be to measure the commuters' perceptions of quality (Dodds and Monroe 1985).

The perceived quality of service refers to the consumer's judgement about a product's overall excellence or superiority (McKnight *et al.* 1986), and this differs from objective quality, as it is a form of attitude related, but not equivalent to satisfaction, since perception of quality results from a comparison between expectations and perceptions of performance. A challenge arises with regard to the definition of public transport service, since the quality of service in the context of public transport is extremely difficult to define, as it is made up of numerous attributes which may be in competition with each other, including such factors as fares, comfort, schedule, reliability, the extent of service and safety of the service. This same challenge applies to both objective and perceived service and researchers (McKnight *et al.* 1986), have emphasised the difference between objective and perceived quality in the conceptualisation of service quality, by postulating

that quality service is a form of overall evaluation of the product or services and may be regarded as similar in many ways to attitude (Olshavsky 1985). Some researchers such as Holbrook and Corfman (1985) argue that service quality is a relatively global value judgement.

In the service quality literature, expectations are specifically viewed as the desires or wants of consumers, that is, what consumers feel a service provider should offer rather than would offer (Pasuraman *et al.*1988). Gubbins (1988) defines quality within the context of public transport as specifically referring to the way in which a transport organisation looks after the passengers in its care during a journey. In this study, transport service quality is regarded as the degree and direction of any discrepancies between the service perceptions and expectations of a passenger. Expectations (or expected service quality) are perceived as the passengers' wants or desires, in other words, what the passengers feel a service provider should offer rather than would offer, and perceptions (or perceived service quality) refer to the passenger's judgement about the overall excellence or superiority of a service and are similar to attitudes.

Although it is possible to study comprehensive models of service quality and also their limitations, understanding exactly which dimensions of quality are of importance to customers is not always easy in evaluating service quality, and it is also not sufficient for companies to set quality standards in accordance with misguided assumptions about customers' expectations. A further problem in defining service quality lies in the importance which customers often attach to the quality of the service if the service provider is distinct from the service it offers. In other words, it is not possible to separate the two as readily as in the case of goods, and it is thus essential that service organisations take into account the dimensions of service quality. Theo (2012) recommends that service organisations should seek to understand the determinants of service quality, which would in turn, help service organisations to focus on removing non value-adding processes or "muda" from their delivery systems.

### 3Service Quality Dimensions<sup>1</sup>

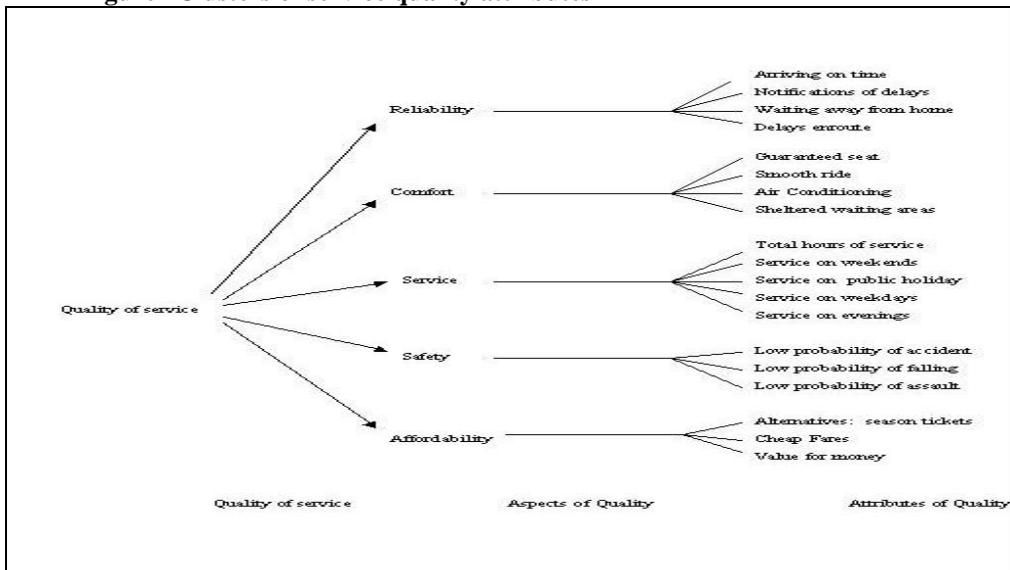
The quality of service may be measured by means of quantitative research, and although the SERVQUAL measurement instrument has been most often applied in the service industries (Parasuraman *et al.* 1988), it has not been without complexities, which resulted in inter-alia, the dimensions being reduced to five, known as RATER (Reliability, Assurance, Tangibles, Empathy, Responsiveness). However, with regard to transport services, it is important to note that passengers do not perceive quality as a one-dimensional concept and their assessment of quality includes perceptions of the following multiple dimensions, namely performance, features, reliability, conformance, durability, serviceability, aesthetics and perceived quality (equivalent to prestige) that apply to all services (Zeithaml and Bitner 2000). However, it is also not easy to apply the general service quality dimensions which are applicable to service industries to passenger transportation. Moreover, the SERVQUAL instrument has also not been without criticism (Buttle, 1996), for inter-alia, not being ideal for determining commuters perception of

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<sup>1</sup> The words constructs, attributes and dimensions all have the same meaning and are used interchangeably in this paper.

transport service quality. Thus, in order to measure service quality in the passenger transport context, a different approach is required and the following attributes namely, delays on routes, traffic safety, personal security, frequency of service or convenience of pick up times, directness of service (no transfers); ride comfort; temperature control, noisiness, availability of seats; availability of service, crowdedness, walking distances to vehicles and sheltered waiting areas, have been found to be the most frequently mentioned (McKnight *et al.* (1986). The aforementioned criteria have been grouped into a cluster of five important service attributes (RECSA) as depicted in figure 1.

Figure 1 Clusters of service quality attributes



Source: McKnight *et al.* (1986).

Each of the service quality dimensions described in figure 1 above is discussed briefly in the next sections.

### 3.1 Dimensions of Service Quality

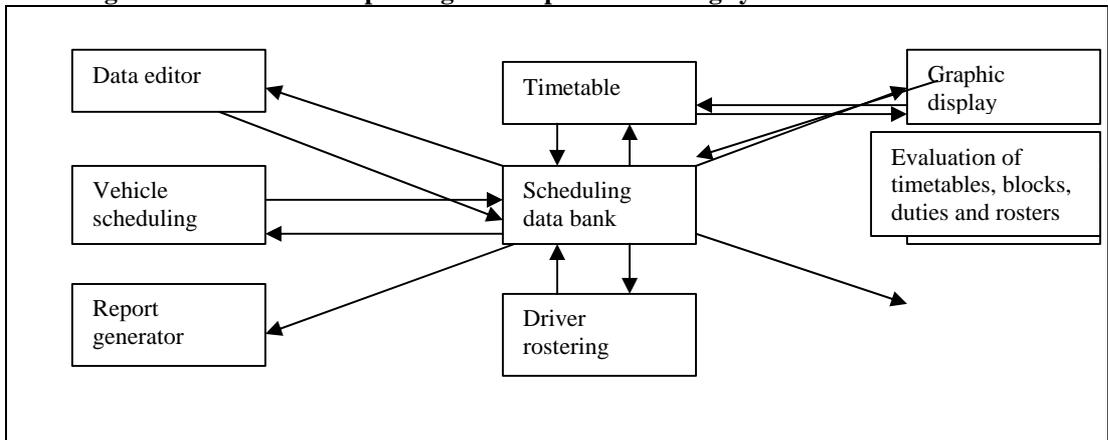
#### 3.1.1 Reliability of the Service

Service reliability refers to the ability to perform the service dependably and accurately in terms of service punctuality, adherence to timetable (including arrival at destination, journey length, and communications), and adherence to scheduled routes (McKnight *et al.* 1986). In its broadest sense, reliability means that the public transport operator will deliver on promises about being punctual or on time, and in order to deliver on this promise, the operator requires efficient operating or scheduling systems. While the scheduling process is important in the effective management of transport operations, the complexity of the public transport operational planning and scheduling process has challenged researchers to develop automated, computerised procedures, which resulted in the development of a number of software packages (Button and Hensher 2001). One such software (figure 2) illustrates the important features of the scheduling system and the operational process, which includes four basic components, namely, network route design, setting timetables,

## A Theoretical Overview of Public ....

scheduling vehicles to trips and assignment of drivers, and the purpose of the vehicle scheduling component is to plan and schedule vehicles to trips according to given timetables.

**Figure 2 Overall view of passenger transport scheduling system**

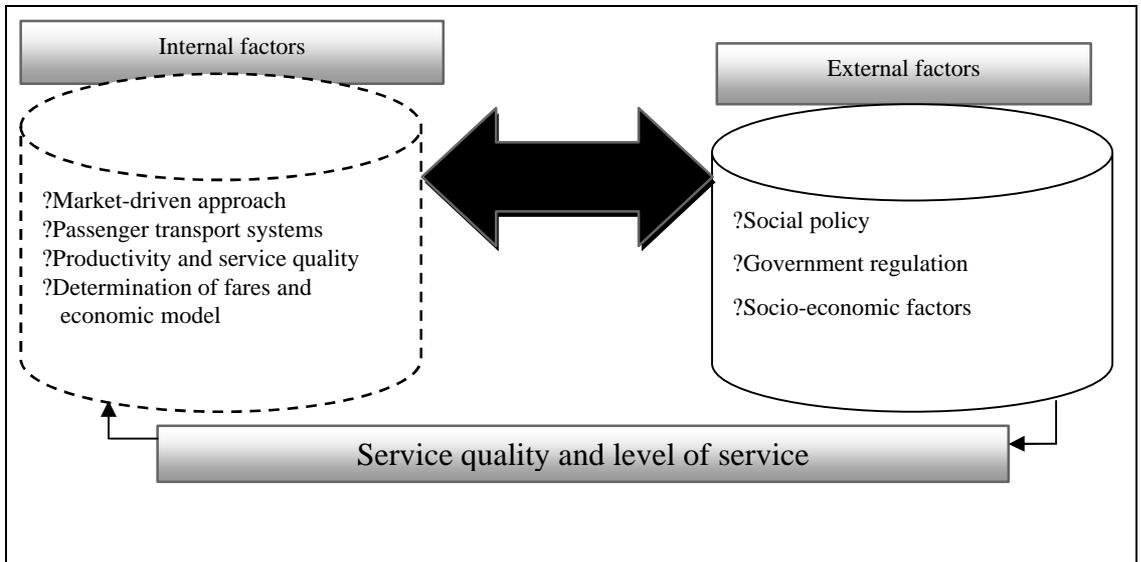


**Source:** Button and Hensher (2001).

Timetables are important in the scheduling process because the dissemination of information to passengers is critical to the successful operation of public transport services, and in maintaining and stimulating demand. With respect to South Africa, timetables are not available from most operators and where they are available, the quality is often poor or the timetables are difficult to comprehend. In addition, because information dissemination processes are mainly paper based, there are numerous problems relating to presentation, distribution and accuracy. It is therefore necessary to develop systems that will be sufficiently flexible to respond appropriately to the needs of commuters (Mashiri *et al.* 2010). The importance of the timetable arose from the fact that the commuters had interpreted the timetable either as a form of contract or as a declaration of commitment on the part of the public transport service operator to provide commuters with certain travel services. However, it appeared that the respondents had soon determined that the timetable was of little value, as they had confirmed that the bus companies rarely adhered to it with any sense of urgency.

All the components of scheduling are extremely sensitive to both internal and external factors (figure 3), as well as to other factors which are often evident when buses operate in mixed traffic. It is well known that maintaining a schedule may be a challenge as signal timing, traffic congestion, traffic incidents, and other factors may disrupt the expected running timetable. All of the aforementioned factors have a direct bearing on the public transport industry as they may give rise to service interruptions (Levinson 2011).

**Figure 3 Internal and external factors**



**Source:** Gubbins (1988).

Internal factors include internal systems, quality of service, fares and operational strategies, and external factors include social policy, government regulation and other socio-economic factors which often affect fares and the quality of service, all of which may easily result in an inefficient public transport system or scheduling of service.

In a focus group study commuters were of the view that since the bus companies in SA had been privatised, the public had no voice or power in terms of establishing the criteria for an acceptable level of service. One example often cited was problems with the scheduling and cancelling of services at short notice. The study concluded that it was essential for the local authorities to constantly review their efforts to communicate with the public on local transportation-related issues and to understand that there needs to be buy-in from the local community as regards decisions related to transportation. Ignoring the buy-in factor would lead to the local people becoming frustrated and unwilling to support transportation policy at large, and commuters would continue to perceive public transport as poor compared to the private motor cars (McGovern 2005).

It is clear from the discussion above that implementing appropriate systems and making joint and correct public transport decisions will improve the reliability of the public transport service, encourage continuous co-operation between commuters and public transport authorities, and enhance commuter satisfaction.

### 3.1.2 Service Comfort

Service comfort involves the availability of service aesthetics, and includes the availability of seats and space (often referred to as passenger density), smooth journeys, the availability of air conditioning and the conditions of shelters (Litman 2008). The qualitative aspects of transport are increasingly being discussed as factors influencing the choice between individualised and public transport (Martin and Haywood 2011). The literature on transportation demonstrates the fact that the qualitative attributes of public transport may affect the welfare of individuals and their modal choices (Litman 2008).

Public transport researchers have found that, when deciding which mode of transport to use, service comfort is one of the issues that is often taken into consideration (Samson and Thompson 2007), and rated as one of the top 11 key attributes that are important in determining the mode of transport used (Solvoll and Mathisen 2010). In addition, research on customer satisfaction in public transport showed that the comfort of service was one of the top four factors that positively correlated with overall satisfaction (Budiono 2009).

Service comfort plays an important role in ensuring that passengers enjoy their journeys while increased comfort may also improve the on-board health and environment status. The end result may, in turn, be improved productivity in the workplace (Mashiri *et al.* 2010), and the extent to which public transport comfort improves productivity in the workplace is an important area of study which should be pursued although it is beyond the scope of this study.

In practice, it is often found that public transport in South Africa lacks comfort because, among other things, loading conditions often prevent people from boarding at the desired time as crowding imposes relatively severe discomfort.

### **3.1.3 The Extent of the Service**

The extent of service involves service availability, the extent to which a public transport mode take commuters to their exact destinations, and the friendliness of the frontline staff (McKnight *et al.* 1986). The availability of the service refers to the availability of the service on weekdays, evenings, weekends and public holidays. A service provider should plan the daily schedule irrespective of the demand, since scheduling is a potentially important operator service strategy. When used as a marketing tool, the schedule of an operator aligns operator capacity with commuter needs and the result is an optimisation of the service offering.

The use of the operator's schedule as a marketing tool implies that both the recognition of these demand characteristics and the allocation of individual offering of service to meet the needs of both classifications of commuters (Farris and Harding 1976). The convenience of the service is also important and is the key to increasing the number of public transport users (Ahmad 2010), and according to Farris and Harding (1976), public transport organisations should consider demand and adjust the service according to the service requirements.

In SA, certain routes or markets are protected for either political or social reasons. As a result attempts by operators to contract the service in these areas may be interpreted as antisocial acts on the part of management. There is also the problem of tradition, in that after serving particular city-pair markets for long periods of time, the operators may be perceived as residents of the communities by the regulatory agencies, and as a result, may not be permitted to contract operations if demand diminishes. However, even in the face of these difficulties, management should continually review its service offerings as regards both expansion and contraction possibilities as both these strategies may be of merit in achieving profitable and efficient levels of operations.

Service availability strategy involves altering the service mix in response to a market change. Urban public transport operators the world over are currently attempting to upgrade the quality, dependability, and security of the service. Many cities, including cities in the United States of America, for example, have resorted to express type bus services during peak hours. In such cases, the operators are utilising the strategy of service-mix alterations in order to achieve a greater balance between the changing wants and needs of their customers. Service mix strategy involves finding new uses for present service offerings. Urban high-way systems are most efficiently used when other modes are limited to non-peak hour while future urban rapid-transit systems should include freight-carrying capacity to help offset operating costs. In all such cases, finding new uses for existing operations has resulted in a more complete utilisation of facilities and, hence, greater returns on capital and labour investments.

### **3.1.4 The Safety of the Service**

The safety of the service may be defined as the number of accidents involving a transport mode and refers to the passengers' fears that they are more likely to be involved in an accident as a result of using a particular transportation mode, the condition of vehicles, driving behaviour and not obeying the rules of the road (McKnight *et al.* 1986). It is important that service safety is viewed from three, equally important, angles, namely, safety of passengers, safety of drivers, safety of buses and minibus taxis (McKnight *et al.* 1986), and it is important to note that, in order to achieve a high degree of safety, all three of the abovementioned areas must work together smoothly and efficiently. Each of the safety aspects will be briefly discussed.

#### **3.1.4.1 Safety of passengers**

Research shows that households were becoming insular in the way they lead their lives or how artificial bubbles were being created to enable them to feel more secure when undertaking day-to-day journeys (McGovern 2005). The goal of service safety is to reduce vehicle fatalities and injuries and the associated costs by ensuring that transport operators maintain the minimum standards for both their drivers and their vehicles. The reason for this is that transport operators in South Africa are responsible both for the mechanical maintenance of their buses and minibus taxis, and for the actions of the drivers over which they exercise control (McKnight *et al.* 1986).

With regard to international approaches to public transport safety, it is evident that various countries approach it in different ways, and that the measures adopted to improve safety often vary (World Bank 2006). In Sweden, for example, the approach has been that of quality management of the transport component of the transport organisation concerned. A programme had been introduced in France to increase the involvement of private companies in road safety related to their use of vehicles. Agreements have been drawn up between government, insurance companies, the national occupational health fund and volunteer companies. The programme focuses on motivating transport organisations to undertake road safety programmes designed to increase the awareness of the cost of road crashes to the organisation concerned, with worker compensation and vehicle insurance premiums being decreased if the programmes are implemented. Some of the programmes have also concentrated on drunk driving because of the significant role played by alcohol in both work- and non-work-related road accidents in France. In South Africa, alcohol related road accidents increased from 1.86% in 2004 to 2.55% in 2006 (Arrive Alive 2103).

The Traffic Safety Council in Germany had promoted the establishment of voluntary safety circles in which employees from transport organisations meet to discuss critical issues and to devise solutions under the leadership of an experienced moderator. The Traffic Safety Council also runs a one-day training course on safe, economical and environmentally friendly driving. In the United Kingdom, various measures have been implemented to improve safety in organisations, and these include driver training programmes, incentive schemes, penalties, accident reviews, driver monitoring systems and driver feedback procedures. However, it is unclear whether these measures have had the desired effect (World Bank 2006).

The profiteering nature of the minibus taxi industry in South Africa in particular, is a cause for concern as regards passenger safety, since minibus taxi operators feel compelled to maximise revenue and minimise the cost of the service, which in effect translates into overloading, wars between taxi associations, and a general failure to observe the rules of the road. Govender and Allopy (2006:106) assert that “the minibus taxi transports most people to their destinations, sometimes even in record time but often, at the expense of other road users and even at the expense of their lives.”

### **3.1.4.2 Safety attributable to Driver behaviour**

Regarding driver safety, it is essential that transport organisations invest in research and development (and technology) aimed at enabling operators to manage and control their vehicles better. For example, on-board computers provide public transport managers with detailed reports on the behaviour of drivers and the performance of vehicles. These reports may be used to modify driver behaviour and for accident prevention, accident analysis and accident reconstruction (World Bank 2006).

Researchers (Maunder, Pearce and Babu 1999) argue that one single factor is unlikely to cause an accident and therefore it is probable that a combination of causes would result in an accident. The factors involve drivers and their driving habits coupled with the ease of obtaining a driving vehicle licence (in South Africa), lack of professional driver training, lack of knowledge of the highway code, driver fatigue as a result of long working hours, overloading of vehicles in order to maximise revenue, drivers consuming alcohol or drugs, and speeding. The overriding factor that needs to be addressed is how to improve bus driver behaviour. Maunder *et al.* (1999) suggest the following as possible solutions to the problem of driver behaviour, namely, drivers should be taught the social and psychological skills involved in being safe and responsible, refresher driver training courses to eliminate the inevitable bad driving habits acquired should be encouraged, awards for accident-free driving should be promoted, medical and health checks should be compulsory for all drivers, especially those who are ageing, and the enforcement of legal maximum hours driving public vehicles should be accorded priority.

### **3.1.4.3 Safety of the Vehicles**

With regard to vehicle safety, it has been shown that the condition of the minibus taxis is a cause for concern, as these vehicles have the potential of causing large numbers of casualties if they are involved in accidents. Although it is a legal requirement (in SA) for all minibus taxis to have certificates of fitness is in itself good, the problem however is the ease with which such certificates are obtainable from corrupt roadworthy testing stations, irrespective of the condition of the bus or minibus taxi (World Bank 2006). Overall, the

factors affecting the vehicle condition have been found to include inter-alia, the lack of maintenance, worn tyres and fake parts in an effort to minimise costs, and age of the vehicles. For example, the average age of the bus fleet has increased from 10.1 years in 1991 to 12.7 years in 1996, while the average age of the minibus taxi fleet is 13 years (Govender and Allopi 2006).

Addressing the abovementioned factors may increase costs, but is likely to be less expensive in the longer term, when compared with the cost of human tragedy, vehicle replacement and other third-party costs. It is thus essential that owners and operators be encouraged to maintain their vehicles in a much higher standard than is presently, since preventative maintenance may improve both the performance and productivity of vehicles, extend the operational life of the vehicle, and reduce accidents. Furthermore, owners and operators need to understand that vehicle maintenance is sound, effective business practice which may minimise vehicle downtime and costly, time-consuming breakdowns whilst the vehicle is in service (Maunder *et al.* 1999).

#### **3.1.4.4 Other factors affecting road transport safety**

Road condition which includes the lack of road maintenance, poor wheel alignment, and lack of traffic signs and safety features, have all been identified as possible causes of accidents together with the weak enforcement of traffic regulations. Furthermore, a lack of road sense on the part of pedestrians, especially in rural areas when herding animals or crossing the roads, have also been cited as a factor affecting road safety (Robertson 2006).

There are specific features of the bus industry in SA, as well as particular challenges facing the general public transport industry in South Africa with regards to safety, and these include:

? The rivalry and mistrust between bus and minibus taxi operators, and intimidation which is prevalent in the taxi industry, remain a challenge for both government and the traffic authorities;

? Constant attention is given to the roadworthiness of buses but not to that of minibus taxis;

? Government and the bus industry have been cooperating for a number of years in setting the technical standards for all aspects of bus construction and bus components but little progress with regards to the mini-bus taxis;

? Technical standards are contained in road traffic legislation, regulations and through the manufacturing standards system regulated by the South African Bureau of Standards; the standards are monitored and updated based on the findings of accident investigations; and recent additions to the standards include specifications for roll-over protection as well as the construction and anchoring of bus seats, steering, braking and tyre standards are included in the areas which are specifically focused upon during the testing process; and safety procedures require drivers to conduct safety checks on all vehicles during journeys (Arrive Alive 2010).

Maunder *et al.* (1999) argue that it is not possible for either a single individual or discipline to bring about improvements in safety, and a collective responsibility and a collective spirit is required of all those involved, including bus and minibus taxi owners, drivers, conductors and mechanics; bus and taxi operator associations and unions; police and government transport departments; road safety associations and driver training schools; manufacturers of vehicles, spare parts and tyres; and all road users.

On a positive note however, it has been argued that the minibus taxi industry in SA does care about the service and safety of its passengers and drivers and, hence, the launch of the Hlokomela campaign, which was designed to change the behaviour of the minibus taxi owners, operators, drivers and, to a certain extent, passengers (Mthembu 2010; 2011). The Administration Adjudication of the Road Traffic Offences Act (AARTO) represents a step in the right direction, however, vigorous and speedy implementation of the Act is likely to be a challenge as drivers question its relevance (Moss 2010).

### **3. 5Affordability of the Service**

Service affordability involves value for money and thus, includes fares charged by the public transport modes (McKnight *et al.* 1986). The commuting public will always try to equate the quality of service with the fares paid, thus determining the correct fares is always a challenge. In the UK for example, transport operators submit fare increase applications to the city council every year, and in considering whether or not to grant a fare increase application, many authorities tend to take into consideration the measure of affordability. There is however no internationally agreed-on method of measuring affordability when applied to bus services (Maunder *et al.* 1999).

The usual approach to determining fares involves dividing the price of a number of standard journeys by some measure of income. While conceptually this is a simple measure, it is however not easy to measure either parameter, since the cost of a journey may vary significantly depending on the distance travelled and whether monthly passes are used or not. It is equally difficult to measure income on a standard basis, and unless there is reason to select a specific journey, it is probably best to take the average fare paid by all passengers as the measure of the fare, and either the average income of all groups concerned or the GDP per capita, if available, as the measure of income (World Bank 2006). The average monthly wage of the population in the area served by the bus system may also be useful in determining the affordability of bus fares. However, since this information is not always available, in some countries the figure is calculated for the country as a whole although urban incomes are usually significantly higher than average incomes (World Bank 2006).

Although pricing in public transport is important as it affects the affordability of service (Button and Hensher 2001), it is essential that the correct balance be established between service and fares charged. At the same time, public transport organisations are concerned about maximising the efficiency of their operations. Therefore, in economic terms, the concept of efficiency relates to the notion of maximising output per unit of input.

It is widely accepted that the development of public transport systems leads to social exclusion and inequality of access to facilities. For example, public transportation is a necessary element in the consumption of several other important services and its absence may create a major problem. Public transportation is also subject to economies of scale and, thus, equity issues in the provision of transport services are of particular importance. However, this clearly does not mean that it is possible for high-quality transport systems to be available at all locations.

In a study into the significance that commuters attach to the quality characteristics of public transportation systems, it became clear that, in terms of both the entire population surveyed and the three major subgroups of users (under 20 years and single, elderly and

low income) it was the service quality items rather than the strict efficiency items that received top ratings. Among the 32 quality attributes that were included in the study, items such as arriving as scheduled, having a seat, no transfer trips, less waiting time, availability of shelters at pick up points, and availability of the service, emerged as the definite choice of users instead of the traditional emphasis on such service quality items as faster trips and more direct routes (Tomazinis 1975).

The existence of both process and outcome quality may explain why a bus or mini-bus taxi operator with marked technical skills, including effective planning and scheduling of trips, may fail to compete effectively with another public transport operator who is able to deliver superior, interpersonal quality in the manner in which the service is provided. However, if the commuters are able to judge the technical quality of the outcome effectively, they will base their quality judgements on process dimensions, such as the bus operator's ability to solve passenger complaints, as well as on his/her ability to offer quick solutions and show empathy and courtesy.

If commuters are not able to evaluate the technical quality of a service accurately, they form impressions of the service, including its technical quality, based on whatever sources exist, using either their own understanding or cues that may not be apparent to the operator. Transport operators should ensure it is possible to evaluate the service objectively in order to improve the service encounter experience, for example, in situations in which promises are either kept or broken and where the proverbial "rubber meets the road," sometimes termed real-time marketing. Commuters build their perceptions based on these service encounters, and a service encounter may be potentially critical in determining customer loyalty. If, for example, the commuter is interacting with a bus operator for the first time, this initial encounter will create the commuter's first impression of the organisation. Since in this instance, the commuter has no other basis for judging the quality of the service offered, this initial encounter may take on excessive importance in the commuter's perceptions of quality. However, even in situations in which the commuter has had multiple interactions with the transport service company, each individual encounter is important as regards creating a composite image of the organisation in the commuter's memory (Zeithaml and Bitner 2000). Positive encounters may result from improvements effected by the service operators which, in turn, may positively affect the utilisation of and the demand for service.

#### **4. Discussion, Conclusions and Recommendations**

From the above discussion of the public transport service quality dimensions, it may be concluded that passenger transport will best serve its customers when fares and routes are integrated and, when it offers access to a wide range of destinations with easy transfers. These easy transfers are made possible by purpose-built interchanges, where passengers may change modes in safety, and are protected from the elements.

With the advances in information technology (ICT), commuters who have access to mobile telephones are able to access both the internet and social media in order to access timetables. Social marketing programmes may be of value as information instruments in support of transportation demand management policies. Such programmes may function as effective channels of communication in building dialogue, garnering public support for

## A Theoretical Overview of Public ....

the demand management policy in question and in delivering important transport messages directly to commuters (McGovern 2005).

Several international municipalities have implemented efficient scheduling systems successfully. For example in Dubai, the Dubai Public Transport Department caters for a quarter of a million commuters with approximately 550 buses and 1 000 drivers working on almost 55 routes (Shaibani 2005). In view of the increase in the number of passengers, buses, drivers and routes in Dubai, the Dubai Public Transport Department implemented a system known as MICROBUS in order to raise efficiency levels. MICROBUS is vehicle dispatch software that consists of different modules that may be used to optimise the internal workflow of public transport operators of all kinds and sizes (Shaibani 2005). Commuters who use the buses benefit from the system as a result of the comprehensive and simple bus timetable which is available at bus stops. This guarantees the predictability of the service in terms of arrival/departure schedules, which may be sent to the commuters via SMS.

Mentor Streets® Schedule Software Suite is another scheduling software program which was developed for transport agencies that wanted to eliminate slow, inefficient manual processes and streamline schedule creation (Gregory, 2011). As route information is entered, the scheduling system handles all the mathematics required, enabling the scheduler to assign runs, blocks and rosters by simply dragging the mouse. When the schedule is completed it may be exported to Google Maps with a single click (Gregory 2011).

ICT is important in managing public transport service quality, since it can increase the effectiveness, efficiency, and capacity of existing transportation systems, including information processing, communications, control and electronics (Mashiri *et al.* 2010). The specific benefits of ICT solutions are primarily increased efficiency, lower costs and higher productivity levels, which translate into increased reliability, shortened travel times, and greater convenience. Furthermore, ICT technology may also result in higher passenger satisfaction, and the ability to promote passenger transport. Mamatkulov (2010) emphasizes that another important consideration with regards to ICT involves the introduction of Integrated Circuit Card (ICC), Ticketing and Automatic Vehicle Location (AVL) systems that improve the quality, efficiency, and transparency of the passenger transport sector

With regard to the BRT Rea Vaya service in SA, although there are communication systems at the stations, namely, Variable Messaging Screen (VMS), the systems at the stations do not work properly, and Rea Vaya has had a number of problems with the VMS signs, caused mainly by optical cable breaks by contractors and, cable theft (Rea Vaya 2012).

It is recommended that intercoms be installed inside the stations so that passengers may be informed of the time the next bus or mini-bus taxi will arrive. The existing intercoms are used only to notify passengers about safety deviations and any change of operations, and information regarding the next bus (Rea Vaya 2012).

It is also essential that passenger transport operators be responsive to a wide range of objectives and influences, including concerns about maintaining established services,

balancing budgets, legal constraints, public safety, social equity and political considerations. However, responding to marketplace signals about demand is often lower down on the list of priorities. Nevertheless, in balancing the many competing objectives, it is imperative that the factors affecting demand not be taken for granted (Mashiri *et al.* 2010).

The question whether building transport 'ridership' would have more to do with persuading people to use the transport every day, once a week, or a few days a month, has profound implications for transport marketing, pricing strategies, and transport financing, since the transport industry has long focused on regular riders, large numbers of trips, and daily commuting. In addition, captive and public transport dependency concepts are also common in the industry's view of its markets (Mashiri *et al.* 2010).

In conclusion, understanding the service dimensions that affect public transport is important as gaps often emerge between service perceptions and expectations (Parasuraman, *et al.* 1988). The successful promotion of the public transport service dimensions will depend on the ability of government and public transport organisations to market service quality dimensions effectively. Furthermore, segmentation and the understanding of commuter behaviour plays an important role, and it is essential that the marketing of service dimensions be targeted at the correct audience and the correct interventions be instituted.

## **5. References**

- Ahmad, M.Y. 2010. *Good public transport system needs reliability, availability, Malaysiakini*, Malaysia.
- Arrive Alive 2010. *The bus industry in South Africa and road safety*. Department of Transport, Pretoria, South Africa. Available online at: <http://www.arrivealive.co.za>. Viewed on 18 February 2010.
- Arrive Alive 2013. Fatal crashes involving drivers under the influence of alcohol. Available online at: [www.arrivealive.co.za](http://www.arrivealive.co.za). Viewed on 14<sup>th</sup> March 2013.
- Budiono, O.A. 2009. Customer satisfaction in public bus transport, a study of travelers' perception in Indonesia. *Master's Thesis - Service Science Program*, Karlstad University.
- Buttle, F. 1996. SERVQUAL: review, critique, research agenda. *European Journal of Marketing*, 30(1): 8-32.
- Button, K.J. & Hensher, D.A. 2001. Transportation Systems. *Handbook of Transportation Systems and Traffic Control*, 3(1): 33-110. Elsevier Science Ltd, Pergamon, Amsterdam.
- Cape Regional Chamber of Commerce & Industry. 2011. *Cape Town's Public Transport Crisis*. Railways Africa Publishing, Cape Town.
- Dodds, W.B. and Monroe, K.B. 1985. The Effect of Brand and Price Information on Subjective Product Evaluations, in Hirschman, E. and Holbrook, M. (eds.). *Advances in Consumer Research*, 12: 85-90.

## A Theoretical Overview of Public ....

Farris, T.M. and Harding, F.E. 1976. *Passenger Transportation*. Princeton, Prentice Hall, N.J, USA.

Gregory 2011. Systems that work. *Mentor Engineering Inc*, Available online at: <http://www.mentoreng.com>. Viewed on 23 May 2011.

Govender, R. and Allopi, D. 2006. Towards a safer minibus taxi industry in South Africa. *Proceedings of the 25<sup>th</sup> Southern African Transport Conference*, pp 100-108. SA Transport Conference Publishing, Pretoria.

Gubbins, J.E. 1988. *Managing Transport Operations*. 3<sup>rd</sup> ed. Kogan Page Limited, London, UK.

Holbrook, M.B., and Corfman, K.P. 1985. *Quality and value in the consumption experience: Phaedrus Rides Again*, in J. Jacoby and J. Olson (eds.). Lexington Books, Lexington, MA.

Johannesburg Press Club. 2011. *To Toll or Not to Toll: SA's Transport Crisis*. Johannesburg Press Club Publishing, Johannesburg.

Levinson, D., 2011. Fundamentals of Transportation/Transit Operations and Capacity, Wiki Books, Available online at: <http://en.wikibooks.org>. Viewed on 14 October 2012.

Litman, T. (2008): Valuing Transit Service Quality Improvements," *Journal of Public Transportation*, p.43-64.

Mamatkulov, R. 2010. Mangolia: public transport information and communication technology. *Asian Development Bank Technical Assistance Report*, pp 1-12. Urban and Social Sectors Divisions, EARD, Asia.

Martin, K. and Haywood, L. 2011. Pushy Parisian Elbows: Taste for Comfort in Public Transport, European Regional Science Association, Vienna, Austria

Mashiri, M.A.M., Moeketsi, P.N., & Baloyi, V. 2010. Increasing public transport market share in South Africa: The options. Greater Pretoria Metropolitan Council, Public Passenger Transport Division, Transportek, CSIR, Pretoria, South Africa. Available online at: <http://www.thredbo-conference-series.org>. Viewed on 20 November 2010.

Matthews, G. 2013. *Shadow Health and Wellbeing Board, Passenger Transport in Northumberland*. Available online at: <http://committees.northumberland.gov.uk> Viewed on 13 April 2013.

McKnight, C.E., Pagano, A.N., & Paaswell, R.E. 1986. Using quality to predict demand for special transportation- in Behavioural Research for Transport Policy. *International Conference on Travel Behaviour*, Noordwijk, Netherlands: VNU Science Press.

Maunder, D.A.C., Pearce, T.C., and Babu, D.M, 1999. The safety of public transport services in Nepal and India in an environment of deregulation and privatization.

*Transport Research Laboratory*, pp 1-10. CIT PT Safety Nepal and India, United Kingdom.

McGovern, E. 2005. Social marketing applications and transportation demand management: An information instrument for the 21<sup>st</sup> century. *Journal of Public Transportation*, 8(5): 1-24.

Moss, I. 2010. JCCI warns against Aarto. *South African Press Association*, 8 November 2010, pp 1. South African Press Association, Johannesburg. Available online at: <http://www.news24.com>. Viewed on 20 November 2010.

Mthembu, A.J. 2010. *South African National Taxi Council, Launch of the Hlokomela Campaign*, Polokwane, Limpopo Province, South Africa

Parasuraman, A., Zeithaml, V., & Berry, L.L. 1988. SERVQUAL: A multiple-item scale for measuring customer perceptions of service quality. *Journal of Retailing*, 64(1): 12-40.

Rea Vaya 2012. Consumer information, Department of Transport Publishing, City of Johannesburg, SA. Available online at: <http://www.reavaya.org.za>. Viewed on 31 October 2012.

Robertson, G. 2006. Make Roads Safe-The Campaign for Global Road Safety. *Global Commission for Road Safety*, The Fédération Internationale de l'Automobile (FIA) Foundation, United Nations, France.

Samson, R., and Thompson, P. 2007. *Passenger Focus*. Free Post, Warrington, UK.

Shaibani, A. A. 2005. Dubai Municipality implements state-of-the-art public transport scheduling system. Technical Services Publishing, United Arab Emirates. Available online at: <http://www.ameinfo.com>. Viewed on 02 May 2011.

Tomazinis, A.R. 1975. *Productivity, Efficiency, and Quality in Urban Transportation Systems*. Lexington Books, USA.

World Bank. 2006. *Urban bus toolkit: Tools and options for reforming urban bus system, measuring affordability*. World Bank Publishing, Washington DC, USA. Available online at: <http://www.ppiaf.org>. Viewed on 18 February 2010.

Zeithaml, V.A. and Bitner, M.J. 2000. *Services Marketing: Integrating customer focus across the firm*. 2<sup>nd</sup> ed. Irwin McGraw-Hill, New York.

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