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Comparitive Analysis on the Perception of Transport Services (Public V/S Private) in Oman

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Abstract: **The major aim of the study is to conduct the comparative study on the overall perception of customers in Oman in terms of private and public transport services. It involves both qualitative and quantitative approach. As observed over last decade it has been observed that Oman is facing some problems such as traffic congestion in cities, low mobility, and high individual costs of transport. Above scenario is drawing government attention towards development of appropriate public transport systems. Moreover, there are quite a few private transport systems also available in Oman, which includes private taxis, school buses, some private transports especially for students who are studying in colleges and HEI'S. Further study includes collection of primary data from various sources, conducting interviews from various focus groups followed by critical analysis and formation of a statistical model. Later the model is analyzed followed by proper conclusion and recommendation which opens the gate for the future research as well.**

Keywords: **Public Transport, Perception, Comparative analysis.**

1. INTRODUCTION

Public transportation services are integral to societies. Countries need effective public transport services for transit users, apparent or latent, who need and value different modes of public transport. Public transportation is defined as transportation by a conveyance that provides continuing general or special transportation. In an urbanized society, an efficient transportation system is one of the basic components of the social, economic, and physical structure, and it has to be competitive and attractive to the transit seekers. The drive to introduce and nurture strong public transport system in the Middle Eastern region is of utmost importance. A strong public transport system will certainly be favored by the youth and also resolve budget issues in the time of oil price vulnerability and traffic congestion. Additionally, it will improve the Carbon footprint of the country. Considering the traffic congestion, road safety and increasing oil prices, people would prefer public transport not only in long distance but also in shorter distances. A well-established public transport system will be a boon to lower income group living in suburbs of the Sultanate. There are two parallel modes of transport in Oman. An underdeveloped public transport (Buses) and a full-fledged private taxi network. The public transporter Mwasalat launched buses in November,2015 and metered taxi services in December,2018. The buses provide fair connectivity across the capital city and other important cities of Oman. Also, Mwasalat caters to School transport, universities and private transport contracts. Further we can say that in Oman public transport is much new where we can say Mwasalat buses. Customers who need to commute were relying on private taxis since many years. Oman developed various private transport systems in recent years which includes Mwasalat taxis, Marhaba taxi ,Metered Airport taxis. Public transportation services vitalize economies of nations. These services improve the life of communities by providing safe, efficient, and economic transport; they ensure personal mobility through making available cost effective modes; and they benefit society by easing traffic congestion, saving money, and creating and sustaining jobs and carbon emission (Tran and Kleiner 2005). Despite the advantages of public transportation, the concept is still not popular in the Middle East, particularly within the Gulf Cooperative Council (GCC) countries.

2. LITERATURE REVIEW

Transportation services both private or public are much important and crucial system of any of the country. Every day in the U.S., publicly-funded transportation systems provide approximately 32 million passenger trips.It is expected that by 2050, an additional billion people will be living in urban areas, increasing the urban share of the world's population to two- thirds'. However, the current era of rapid urbanization has been marred with inadequacy of capacity and sometimes resources to match urban development needs (UN HABITAT, 2012).These systems serve commuters, students, tourists, seniors, persons with disabilities, and others who rely on trains, buses, ferries, vans, and other accessible vehicles and facilities to reach their destinations (Federal Transit Administration 2003). Transport is not only essential for the economic development of megacities (Zhao, 2010), it plays a crucial role in urban development, providing access for people to education, markets, employment, recreation, health care and other basic services. It is common that cities ranking at the top of surveys and researches measuring urban quality of life have a high-quality urban transport system, prioritizing public transport and non-motorized methods (United Nations, 2010).With rapid urbanization and economic growth, motorization has been accelerating in various countries, for example, in the Asian region & Middle East Region where owing a private motorized vehicle is one of the major aspirations, in particular, where public transport service is inadequate and unsafe(United Nations, 2010). To be well regarded, public transport services must follow regular schedules, be safe and rapid, guarantee high service quality, and utilize resources efficiently (Dridi et al. 2005). And to meet the current needs of society without compromising future generations' needs (Varzaneh 2014).According somestudies, city density has a strong effect on travel behavior. The theory of compact cities argues that higher urban population density is effective in terms of travel reduction by placing public transport nearer to people and because of the expensive parking and high congestion in the city (Varzaneh ,2014). On the other hand, there is another theory which considers multi-centre development as abetter alternative, considering the high amount of commuting between and within the suburbs. Improvements in the public transportation links between urban and suburban areas result in a shift in the population from urban to suburban areas (Chau and Ng 1998).All cities around the world need solutions to economic, congestion, environmental and social transport challenges and public transport is widely seen as a sustainable way to address these (De Gruyter & Currie, 2017) the disparities in land prices and helps to reduce congestion and other problems (Disney 1998). As noted by Corpuz (2007), in order to implement successful sustainable transport policies, the attitudes and perceptions of various social groups must be understood and incorporated into policy making. The results of this study show an important divergence on attitudes by users towards both transport modes under investigation; the car and the bus. As observed since long Oman is observing a low growth in terms of public transport services. Moreover there are strong and consistent efforts made by various private companies in development of various transport services. But it has been observed that the development of both public and private transport is more effective only Muscat. At this time, when public transport services attract significant attention from policy makers globally, why they are lacking in Oman is a major concern of this study. The implementation of public transport and its acceptability depends on the perception and attitude of citizens. This study reveals people's perceptions of public transport in Oman and identifies facilitators and barriers to such services. There is also a proper comparison between both public and private mode of transportation services.

3. METHODOLOGY

3.1 Design and measurement

The study was conducted in the form of a public needs assessment and opinion survey. The first phase of the study utilized desk research, observations, and informal discussions with knowledgeable individuals to assess the situation and arrive at some hypotheses to be tested, in line with it The second phase concentrated on the data collection and analysis.

3.2 Hypothesis

H01: Proper scheduling has no impact on customers using public transport

H02:Appropriate frequency of transport has no impact on customers using public transport.

H03:Arrangements made for waiting times has no impact on customers using public transport.

H04: Sense of safety while using public transport has no impact on its usage.

H05: Age groups are independent on selection of transport (Public /Private)

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3.3 Questionnaire design and data

The primary data for the study was collected using structured questionnaires. The questionnaire consisted of the demographic profile of the customers and the questions related to perception of the respondents regarding their experiences on public transportation system and their efficiency after launching improved public transport system. The respondents were asked to indicate the degree of satisfaction on various implication of transportation system using seven point Likert scale (1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 =strongly agree).Lewis (1993) found that 7-point scales resulted in a stronger correlation with t-test results. Foddy (1994) concludes that a minimum of 5 categories is required to ensure scale validity and reliability. Hence, a 5-point scale is considered in this study, as it is better in terms of obtaining more variation in responses. Descriptive and inferential statistics has been applied in data analysis. Statistically we made use of excel to find out the descriptive statistics and to develop a multivariate regression model. Questionnaire was well designed and structured and met all the aspects of the purpose of the study. The reliability of the survey instrument is tested with the help of Cronbach's alpha method. The reliability test checks whether or not the respondents' score on each attribute tend to be related to their scores on the other attributes (Bryman and Bell, 2007). As a general rule, an alpha coefficient greater than or equal to 0.75 is considered acceptable and a good indication of construct reliability (Nunnally, 1978). The Cronbach's alpha for survey questions of this study is 0.77 which proves that the survey instrument is valid and reliable indicating excellent overall internal consistency.

3.4 Demographic profile of sample data

Data profile Description

Primary data: Structured questionnaire

Secondary data: Obtained from online journals and magazines.

Sampling method 'Snowball' (Morgan, 2008; Malhotra, 1999; Tuncalp, 1988).

Data collection: Questionnaires were sent via email and also distributed personally to nearly 650 respondents.

Response rate: 150response were obtained

Yielding a response rate of 14.9%

Respondents' profile

Male: 48.62%; female: 51.38%

3.5 Descriptive statistics

3.5.1 Regression Statistics

Regression Statistics								
Multiple R	0.576863231							
R Square	0.332771187							
Adjusted R Squa	0.314364875							
Standard Error	0.216576588							
Observations	150							
ANOVA								
	df	*SS*	*MS*	*F*	*gnificance F*			
Regression	4	3.392047633	0.848012	18.0792	4.57E-12			
Residual	145	6.8012857	0.046905					
Total	149	10.19333333						
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*ower 95.0%*	*Upper 95.0%*
Intercept	1.534472552	0.63088108	2.432269	0.01622	0.287562	2.781383	0.287562	2.7813835
Scheduling	0.003906813	0.055380319	0.070545	0.94386	-0.10555	0.113364	-0.10555	0.11336377
Frequency	0.562066911	0.071027548	7.913365	5.9E-13	0.421684	0.70245	0.421684	0.70244999
Waiting Times	0.141186047	0.047677048	2.9613	0.00358	0.046954	0.235418	0.046954	0.23541781
Safety	-0.01873904	0.070270124	-0.26667	0.7901	-0.15763	0.120147	-0.15763	0.12014702

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3.5.2 Chi-Square Statistics

Chi-Square Test							
		Mode of Transport					
	R-TAXI	M-TAXI	Private	Rental	M-Bus	Total	
Age	Observe Frequency						
15-19	15	5	20	5	5	50	0.333333
20-29	5	15	10	10	4	44	0.293333
30-39	6	4	5	4	4	23	0.153333
40-49	6	3	5	2	1	17	0.113333
50 & more	2	2	4	4	4	16	0.106667
Total	33	30	44	26	17	150	
	Expected Frequency						
	11	10	14.66667	8.666667	5.666667		
	9.68	8.8	12.90667	7.626667	4.986667		
	5.06	4.6	6.746667	3.986667	2.606667		
	3.74	3.4	4.986667	2.946667	1.926667		
	3.52	3.2	4.693333	2.773333	1.813333		
	P-value		0.05				
	Test Statistics		0.095257				

4. INTERPRETATIONS

Table above provides model summary of the regression model which indicates the impact of usage of public transport based on various attributes of convenience. The R value (0.57) presented in the model summary table indicates positive correlation among all five attributes under study. The R2 (0.33) value indicates how much of the total variation in the dependent variable (Overall impact of usage of Public transport) is being explained by the independent variables. In this study, R2 is 0.33, indicating that 33% of the variations in the overall impact on customer's overall satisfaction on using public transport. Results of the ANOVA also show that the regression model predicts the dependent variable significantly well. F-statistics state that the overall model is highly significant and a good fit at the 5% level ($0.00 \leq 0.05$) of significance, indicating that the model is significantly having positive impact on satisfaction of the customer.

The multivariate regression model can be written as:

Overall impact on Buying Behavior = 1.53 + (0.003) (X1) + (0.56) (X2) + 0.14(X3) + (-0.018) (X4) +Error

As observed in above model various attributes have significant positive impact on Consumer satisfaction. As observed from the result above from next table, we conclude that **at 5% level** of significance chi-square value will be 0.09. Finally, we conclude that there is no sufficient evidence to accept Ho. We reject H05 and accept the alternative hypothesis. Age and mode of transport both are dependent on each other.

4.1 Conclusion and Recommendation:

In this paper, an attempt has been made to investigate the impact of various attributes of convenience on satisfaction of consumers using Public Transport. Chi-square model also suggested that age group and mode of transport are dependent on each other.

4.2 Limitation of the Study

The time frame and the sample size of the study were limited. The study considered four attributes of convenience. After observing the results, it was realized that taking more attributes under study can improve the accuracy of the model. One more issue which was faced was the response rate. Out of 750 questionnaires sent through various modes, turn up ratio was only 20%.

4.3. Disclosure statement

No potential conflict of interest was reported by the authors.

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