

## THE EFFECT OF LEBANESE PUBLIC TRANSPORT ON VISITOR'S SATISFACTION

*Said LADKI\**, *Fatima SHATILA\*\**, *Samar ISMAIL\*\*\**

**Abstract.** *This study measures the effect of public transport on overall visitors' satisfaction with Lebanon. The target sample represented n=250 tourists and residents of Lebanon. The instrument was composed of two parts. Excluding demographics all items were answered on a seven points likert type scale. Factor analysis was conducted where the Varimax method of rotation was used as a principal components method of extraction. Six performance dimensions of public transport were identified: safety and efficiency ease of use, cleanliness, price value, and difficulty to reach. Factors with eigenvalues greater than or equal to 1.0 were considered significant. Overall satisfaction with Lebanon as a tourist destination is negatively affected by safety and efficiency of transport mode, ease of use of transportation in Lebanon, and ease of access to attractions. Cleanliness and difficulty to reach the attraction positively affected overall satisfaction with Lebanon as a tourist destination. The study also revealed that the price value of transportation has no effect on the overall satisfaction with Lebanon as a tourist destination; therefore, it was eliminated from the results. This study concludes that the performance of public transport has an effect on the overall satisfaction with Lebanon as a destination.*

**Keywords:** *Lebanon; public transport; safety; visitor satisfaction.*

### Introduction

This study measures the effect of public transport on overall visitors' satisfaction with Lebanon. Though several studies have been conducted to determine the effects of convenience on tourist's satisfaction, (Haywood & Muller, 1988; Avgoustis & Achana, 2002) very few have explored the effects of public transport on visitors' satisfaction (Thompson, 2003).

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\* School of Business, Lebanese American University, P.O. Box 13-5053/S-14, Chouran Beirut: Beirut: 1102 2801, Lebanon, sladki@lau.edu.lb.

\*\* School of Business, Lebanese American University, P.O. Box 13-5053/S-14, Chouran Beirut: Beirut: 1102 2801, Lebanon, fatima.shatila@lau.edu.

\*\*\* School of Business, Lebanese American University, P.O. Box 13-5053/S-14, Chouran Beirut: 1102 2801, Lebanon, samar.ismail@lau.edu.

Lebanon is perceived as one of the most attractive destinations in the Middle East. Lebanon's moderate weather, archaeological riches, amazing nature, culture, and art provide the tourist with an enriching experience. The tourism industry is considered as one of the major economic drivers in Lebanon (Lebanese Ministry of Tourism, 2012).

According to the Lebanese Ministry of Tourism, the number of visitors in January 2010 was 106,005 tourists which is about 37.12% increase from January 2009. Among these tourists, Arab visitors ranked first followed by visitors from European countries who ranked second. Additionally, the World Travel and Tourism Council estimated that tourism contributed \$4.3 billion to the Lebanese economy in 2012 (Daily Star, 2012).

Although the number of tourists is increasing each year, the Lebanese tourism industry is still affected by certain factors that raise obstacles to continued growth (Ladki & Sadik, 2004). "*The Lebanese land transport system has reached a critical state. Despite some positive developments during the last decade such as the installation of road signs, safety rules, and development of an extensive network of roads around Lebanon, land transportation in Lebanon continues to be a complex problem*", (Ladki & Sadik, 2004). This implies that the Lebanese transportation sector is growing moderately and continues to suffer from poor infrastructural system.

In Lebanon, the transportation sector is a minor economic driver, which has contributed about \$451 million over the last ten years. Over the considered period, this sector contributed 2% to the nation's GDP. Lebanese public transport sector consists of the following providers: shared taxi services, private taxis, microbus (minivans), public buses, private sector buses/pullman. Visitors may use any of the mentioned public transport modes or use car rentals to access different locations across Lebanon.

Transportation is an important value added contributor to the tourism industry and a determining factor in destination's advancement. Improved infrastructure plays an important role in determining tourist's satisfaction with the country as a destination.

### **Literature Review**

According to King (2007), the existing relationship between the transportation system and travel and tourism industry has positively impacted the American economy. The former is a \$1.3 trillion and a generator of more than 7.5 million direct jobs, while the latter transports the nation's travelers and goods.

The transport sector continues to guide / impact the tourism system. It is well documented that people travel for a reason and getting to places requires the use of several methods of transport. Therefore, Transport lies at the center of the movement of people. Transport plays a vital role in tourism since it:

1. Makes possible the mobility of people.
2. Serves as an exchange mechanism whereby it allows the tourist to visit as many possible places; thus, maximizing the visitor's exposure to the country (Duval, 2007; Page, 2009).

Duval (2007) stated that the linkage between transport and tourism is not well defined. Among the many definitions of transport, transport is viewed as a mean of travel and a destination (floating ocean liners and river cruises). The differentiation between those who use the transport system for business or leisure is complex yet feasible to analyze. Air transport has linked emerging destination with major global tourism feeding capitals. For example, few years ago there were two daily flights linking Beirut-Paris and Beirut-Riyadh. Today there is more than five flights daily linking Beirut-Paris and Beirut-Riyadh. Transportation depends on the appeal of the destination, while the destination heavily depends on transport to promote itself. For example the appeal of Dubai as a destination would not have been successful had it not been coupled with an efficient cost effective air and ground transport system. The strength of this relationship is measured when both contribute to a sustainable tourist flow. Accessibility and connectivity are two important factors, which measure the success of a transport-tourism relationship (Duval, 2007; Page, 2009). Being an accessible and a well-connected destination establish a long lasting synergy that ensures visitors continuity.

Page (1999) has expressed concern about the existing little understanding in the linkage role of transport and tourism in tourist experience. The lack of in depth studies in the tourism field is increasingly perceived as a weakness in the acceptance of destination quality fitness (ETC, 2001). Tourist dedicated transport, which adds value to the destination enjoyment and attraction is perceived as a touristic facility which is used by visitors (Hall, 1999). Disney monorail, London open top city bus tours, steam rails at Pikes Peak are all examples of such transport that is an enjoyable feature of the tourist experience (Law, 2002). However, detailed information about the effect of tourist transport on satisfaction is still limited.

Numerous visitor satisfaction studies have been conducted to measure the contribution of transport to destination image and positive experiences. In

Western Australia Pritchard and Havitz (2006) found that transportation ranked second on importance, but in terms of performance it was considered most poorly among other measured attributes. Similarly, Danaher and Arweiler (1996) reported that there was no significant effect between overall satisfaction with transportation and overall satisfaction with New Zealand as a destination.

### **Methodology**

The target sample consisted of n=250 tourists and residents of Lebanon. Questionnaires were distributed to international students and their families who visited Lebanon. Partially completed questionnaires were eliminated. A total of n=207 valid responses were used in data analysis. Study was conducted by a group of MBA students at the Lebanese American University. The instrument used for this research was originally developed by Thompson (2007), which was later modified to fit our needs. The questionnaire was divided into two parts. The first part consists of 17 items each addressing different aspects of public transport, measured using seven points Likert type scale (1 = strongly agree and 7 = very strongly disagree). The second part represented demographic items gender, age, level of education and employment status. Research data was analyzed using SPSS. Frequency distribution, correlation, regression and factorial analysis were conducted.

### **Results and Discussion**

Table 1 outlines demographic results where 43.5% of the respondents were males and 56.5% were females. About 62.3% of the respondents were between 25 to 34 years in the age group category. The table also reports that 72% of the respondents were holders of bachelor degree, 15.9% were holders of master's degree. Concerning the employment status of respondents, 81.6% were employed, 4.3% were self-employed and the remaining 14.1 were unemployed.

**Table1. Respondents Characteristics**

<b>Gender</b>	<b>Frequency</b>	<b>Percentage (%)</b>
Male	90	43.5
Female	117	56.5
	207	100
<b>Age</b>		
15-24	33	15.9
25-34	129	62.3
35-44	27	13.1

45-54	12	5.8
55-64	6	2.9
	207	100
Level of education		
Bachelor Degree	149	72
Master's Degree	33	15.9
Secondary	25	12.1
	207	100
Employment Status		
Employed	169	81.6
Self-employed	9	4.3
Unemployed	29	14.1
	207	100

### **Factor Analysis**

As a data reduction tool, factor analysis was conducted where the Varimax method of rotation was used as a principal components method of extraction. The goal was to reduce the items to a defined public transport performance measure. "Principal components analysis was selected as an appropriate technique where there were no a priori hypotheses about the components (factors). This selection is exploratory and as a useful exploratory method of revealing the probable number and nature of factors in the set of variables (Tabachnik and Fidell, 1996). All factors with eigenvalues greater than or equal to 1.0 were considered significant and thus retained (Kaiser, 1974)" (Thompson & Schofield, 2007). The Kaiser-Meyer-Olkin (KMO) which measures sample adequacy (the value of 0.518 >0.5) and the Bartlett's Test of Sphericity (df=136;  $p < 0.001$ ), were identified as suitable for such analysis.

Table 2 reports about the 17 items which were designed to measure the six performance dimensions of public transport. The first dimension measured *safety and efficiency* which consists of five items, where three items were about the safety of the tourist while using public transport and the other two are about the efficiency of transport. The second dimension measured *ease of use* of public transport and consisted of four items that talk about the helpful staff and the availability of information. The third dimension measured *cleanliness* of public transport and consists of two items which are the cleanliness of vehicles and the stops. The fourth dimension measured *Price Value* for using transport and consists of two items, one for parking and one for public transport. The fifth dimension measured *Reachable Attractions* which consists of two items which are about the influence of public transport to visit Lebanese attractions. And the sixth dimension

measured *difficulty to reach* which consist of one item which “*some areas of Lebanon, which I would like to visit, are too difficult to travel to*”.

**Table 2. Factor analysis for Public transport Performance**

	<b>Loading</b>	<b>Communality</b>	<b>Eigen Value</b>	<b>Variance Explained</b>
<i>Factor 1: safety and efficiency</i>			2.873	16.899
My car is safe when parked in Lebanon	0.827	0.771		
I would feel safe travelling alone on public transport in Lebanon	0.749	0.736		
Public transport vehicles in Lebanon are safe	0.707	0.826		
Public transport in Lebanon is a fast way to travel	0.609	0.546		
It is easy to park your car in Lebanon	0.535	0.650		
<i>Factor 2:Ease of Use</i>			2.427	14.275
The public transport staff are	0.847	0.834		
I am able to find the information needed to make journeys by public transport	0.804	0.823		
It is easy to buy the right ticket for your journey	0.662	0.741		
Any problems or questions I had were dealt with effectively	0.600	0.783		
<i>Factor 3:Cleanliness</i>			2.067	12.161
The public transport stations/stops are clean	0.827	0.810		
The public transport vehicles are clean	0.673	0.792		
<i>Factor 4: Price Value</i>			2.057	12.1
Parking in Lebanon is expensive	0.852	0.780		
Public transport in Lebanon are expensive	0.781	0.732		
<i>Factor 5: Reachable Attractions</i>			1.765	10.380
The public transport network has influenced my choice of attractions to visit.	0.852	0.859		
Visitor attractions are easy to reach by public transport	0.674	0.843		
<i>Factor 6: difficulty To reach</i>			1.727	10.159
Some parts of Lebanon, which I am interested in visiting, are not easily traveled to	0.811	0.691		

**Regression analysis**

Linear Regression backward method was used to analyze the relationship between the dependent variable being the overall satisfaction with Lebanon as a tourist destination and independent variables that are safety & efficiency, ease of use, cleanliness, price value, reachable attraction and difficulty to reach.

**Table 3. ANOVA analysis**

	<b>Model</b>	<b>Sum of Squares</b>	<b>Df</b>	<b>Mean Square</b>	<b>F</b>	<b>Sig.</b>
1	Regression	58.230	6	9.705	13.205	.000 <sup>a</sup>
	Residual	146.987	200	.735		
	Total	205.217	206			
2	Regression	58.120	5	11.624	15.884	.000 <sup>b</sup>
	Residual	147.097	201	.732		
	Total	205.217	206			

a. Predictors: (Constant), difficulty to reach, Reachable Attractions, Price Value, Cleanliness, Ease of Use, Safety & Efficiency

b. Predictors: (Constant), difficulty to reach, Reachable Attractions, Cleanliness, Ease of Use, Safety & Efficiency

c. Dependent Variable: Overall satisfaction with Lebanon as a tourist destination

Equation:

Overall satisfaction = 4.449 - 0.201 safety and efficiency - 0.175 ease of use + 0.344 cleanliness - 0.023 Price Value - 0.280 reachable attraction + 0.122 difficulty to reach.

The F-value is 15.884 is significant for alpha < 0.05. Table 3 reports about ANOVA analysis results with an F-value of 15.884 and a significance of 0.00. The coefficient of determination R<sup>2</sup> is 0.283 which means that 28.3% of the variation in the dependent variable is explained by variations in the independent variables or 71.7% of the regression analysis explanation can be attributed to other factors which are beyond the mandate of the study (Table 4).

**Table 4. Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.533 <sup>a</sup>	.284	.262	.85728
2	.532 <sup>b</sup>	.283	.265	.85547

a. Predictors: (Constant), difficulty to reach, Reachable Attractions, Price Value, Cleanliness, Ease of Use, Safety & Efficiency

b. Predictors: (Constant), difficulty to reach, Reachable Attractions, Cleanliness, Ease of Use, Safety & Efficiency

The coefficients in Table 5 pinpoints which dependent and independent variables have significant value. The analysis shows that all the independent variables are significant except price value variable. Thus, the overall satisfaction with Lebanon as a tourist destination is negatively affected by three of the independent variables that are the safety and efficiency, ease of use of transportation in Lebanon, and reachable attractions. On the other hand, it is positively affected by the independent variables cleanliness and difficulty to reach attractions in Lebanon. The only independent variable found to be insignificant has significance alpha of 0.05 or greater; therefore, it was excluded from the analysis result in Table 6.

**Table 5. Factors influencing satisfaction**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	4.449	.060		74.671	.000
	Safety & Efficiency	-.201	.060	-.201	-3.358	.001
	Ease of Use	-.175	.060	-.175	-2.923	.004
	Cleanliness	.344	.060	.345	5.761	.000
	Price Value	-.023	.060	-.023	-.387	.699
	Reachable Attractions	-.280	.060	-.280	-4.683	.000
	difficulty to reach	.122	.060	.122	2.036	.043
2	(Constant)	4.449	.059		74.829	.000
	Safety & Efficiency	-.201	.060	-.201	-3.365	.001
	Ease of Use	-.175	.060	-.175	-2.929	.004
	Cleanliness	.344	.060	.345	5.773	.000
	Reachable Attractions	-.280	.060	-.280	-4.693	.000
	difficulty to reach	.122	.060	.122	2.040	.043

a. Dependent Variable: Overall satisfaction with Lebanon as a tourist destination



**Table 6. Excluded Variables<sup>b</sup>**

Model						Collinearity Statistics
		Beta In	T	Sig.	Partial Correlation	Tolerance
2	Price Value	-.023 <sup>a</sup>	-.387	.699	-.027	1.000

a. Predictors in the Model: (Constant), difficulty to reach, Reachable Attractions, Cleanliness, Ease of Use, Safety & Efficiency

b. Dependent Variable: Overall satisfaction with Lebanon as a tourist destination

Findings indicate that public transport in Lebanon can be measured by six factors. These factors contribute to different aspects which visitors look for in determining a transport mode to use when visiting tourist attractions in Lebanon. Transport modes were measured according to efficiency and safety, simplicity of use, cleanliness, price value, and whether public transportation reach attractions. These factors were then tested to see if they affect the overall satisfaction of tourists with Lebanon as a destination. Regression analysis was used to measure the impact of the above factors. Results indicated that some variables positively affect overall satisfaction with Lebanon as a tourist destination, while other variables have negatively affected and others have no effect.

Overall satisfaction with Lebanon as a tourism destination is negatively affected by safety and efficiency of transport mode, ease of use of transportation in Lebanon, and ease of access to attractions. Cleanliness and difficulty to reach the attraction positively affected overall satisfaction with Lebanon as a tourist destination. The study also revealed that the price value of transportation has no effect on the overall satisfaction with Lebanon as a tourist destination; therefore, it was eliminated from the results.

### **Conclusion**

This study concludes that the performance of public transport has an effect on the overall satisfaction with Lebanon as a destination. The public transport system in Lebanon should receive greater government attention and care. The infrastructure needs more investment and improvement in order to attract more visitors and to gain satisfaction. Public transport modes should be clean, easy to use, and information on bus routes should be easily available. Visitors should feel safe when using public transport. Further research should be conducted to explore other factors of public transport which may affect visitors' satisfaction.

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Received November 29, 2013

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