

BUS USERS' PERCEPTIONS UNDER DIFFERENT LEVELS OF SERVICE QUALITY

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1. INTRODUCTION

Recently, there has been a down trend in the number of people using bus service in Japan. Improving service quality is known as one of the major solutions to regain customers. Supporting to the solution, researchers have been focused on understanding how service quality influences users' perception such as customer satisfaction and intention to use services. Despite a number of studies focusing on the relationship between perceived service quality and the aforementioned psychological factors, there have been a very few efforts providing an observation on those factors under different levels of service quality. This study aims to fill this gap by investigating the three-phase decision making process (satisfaction-intention-actual use) under two levels of perceived service qualities.

2. DATA COLLECTION

Two questionnaire surveys were conducted in Kawajima city and Hidaka city, Saitama Prefecture, Japan. According to suggestions from annual surveys conducted by the joint cooperation between Design and Planning Lab., Saitama University and bus providers, Kawajima city was deemed as having a poor level of bus service which is relatively lower compared with the service operated in Hidaka city. Questionnaires were administered to residents' houses located within the service ranges of the typical bus routes in the two cities. Respondents were asked to fill the questionnaire and return it via post by a provided pre-paid envelope. The items included in the questionnaire were designed to measure satisfaction, advantage of bus, descriptive norm, intention, and frequency of use as shown in Table 1. Except for frequency of use, the possible answers for each of the items ranged from 1 (strongly agree) to 5 (strongly disagree) in a Likert-type scale. Of the frequency of use, coding is applied to the real frequency of bus usage filled by respondents as the follows: 1.(frequency \geq 5 days/week), 2.(2 \leq frequency $<$ 5), 3.(0 $<$ frequency $<$ 2), 4.(frequency=0).

There were 2000 questionnaires distributed to employees in Kawajima city, whereas, the distributed number for Hidaka city is 7500. Of the returned questionnaires, 369 (18.5%) and 554 (7.39%) questionnaires were with Kawajima city and Hidaka city respectively. Usable questionnaires were 326 (16.3%) for Kawajima city and 333 (4.44%) for Hidaka city.

Table 1. List of constructs measured by the questionnaire survey

Variable	Item/question	Cronbach's anpha	
		Kawajima	Hidaka
Satisfaction	You are satisfied with the bus service	-	-
Advantage of bus	It is easy to have better transport mode compared to bus	-	-
Descriptive norm	Q1. Number of people using bus is increasing nowadays.	.644	.945
	Q2. Most of people you know tend to use bus more nowadays.		
Intention	Q1. You strongly intend to use bus in daily life.	.691	.934
	Q2. The possibility to daily use bus is high.		
Frequency of use	On average, how many days per week do you use bus?	-	-

3. RESULTS

Results of descriptive analysis are presented in Table 2, whereas; Table 3 shows correlations between psychological variables. A multiple regression analysis aiming to find out the influencing factors of users' intention to use bus service was conducted for both Kawajima city and Hidaka city as shown in Table 4.

Table 2. Descriptive analysis of investigated variables

Construct	Mean		Standard Deviation		Independent t-test			Mean Difference
	Kawajima	Hidaka	Kawajima	Hidaka	t	df	Sig.	
Satisfaction	3.42	2.49	.862	1.08	12.26	630.88	.000	.934
Advantage of bus	1.94	2.44	1.11	1.39	-5.08	630.10	.000	-.497
Descriptive norm	3.52	3.76	.865	1.07	-3.13	634.51	.002	-.237
Intention	4.10	3.24	.955	1.38	9.30	590.50	.000	.861
Frequency of use	3.48	3.43	1.05	.891	.69	635.27	.492	.052

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As can be seen in Table 2, the data suggested the difference in level of bus service quality between the two cities. Users' satisfaction in Kawajima city is poor with a mean score of 3.42 which is considerably lower than the score of 2.49 for Hidaka city (a lower mean score means a higher satisfaction). In addition, the independent t-test showed significant differences between all of the investigated variables in the survey. Respondents in Hidaka city gave better scores in terms of advantage of bus and descriptive norm. Whereas, people in Kawajima city showed a low score of intention (4.10) compared with that of Hidaka city (3.24).

Table 3. Correlations between investigated variables

	Pearson's correlation coefficients	
	Kawajima	Hidaka
Satisfaction \leftrightarrow Intention	.277**	.391**
Descriptive norm \leftrightarrow Intention	.464**	.523**
Advantage of bus \leftrightarrow Intention	-.414**	-.468**
Intention \leftrightarrow Frequency of use	.483**	.639**

Note: **.Correlation is significant at the 0.01 level (2-tailed)

As presented in Table 3, all of correlations between variables under the two surveys are significant ($p < 0.01$). In addition, it is observed that the correlation coefficients for Hidaka city case were higher than those for Kawajima city case.

Table 4. Regression analysis on intention to use bus service

Model	Unstandardized coefficients		Standardized coefficients	t	Sig.	R2	Adjusted R2
	B	Std. error	Beta				
<i>For Kawajima city</i>							
(Constant)	2.804	.329		8.513	.000	.270	.264
Satisfaction	.115	.057	.104	2.026	.044		
Descriptive norm	.360	.061	.326	5.893	.000		
Advantage of bus	-.189	.049	-.218	-3.880	.000		
<i>For Hidaka city</i>							
(Constant)	1.352	.292		4.632	.000	.439	.434
Satisfaction	.326	.055	.255	5.983	.000		
Descriptive norm	.484	.057	.374	8.477	.000		
Advantage of bus	-.305	.044	-.307	-7.016	.000		

According to Table 4, all coefficients of the two models are significant at the level of 95%. In addition, it is noticed that regression coefficients of the Hidaka city model are higher than those of the model for Kawajima city. In addition, both models showed higher values of coefficients of the variable "descriptive norm" compared with "satisfaction" and "advantage of bus". Furthermore, compared to "advantage of bus" the variable "satisfaction" had a better impact on intention in Kawajima city model, while an opposite result was found in the model for Hidaka city.

4. CONCLUSIONS

Results from the two surveys supported for the assumption that bus service quality in Kawajima city is lower than that of Hidaka city. Thus, the two cities are appropriate samples for investigating the influences of bus service quality on bus-users perception.

Respondents in Kawajima city expressed a lower satisfaction, lower descriptive norm, lower advantage of bus, and lower intention due to a lower service quality. Despite the lower perceived service scores, people in Kawajima city used bus as frequent as their counterparts in Hidaka city. This is probably explained that some of respondents were limited with substituted alternatives, then they had to use bus even they perceived a low bus service quality.

In addition, analysis results of the two surveys confirmed satisfaction, advantage of bus, and descriptive norm as determinants of bus-usage intention. Furthermore, it is recorded that a stronger influence of the determinants were found in case of the higher service quality (Hidaka city) compared with those of the lower service quality (Kawajima city). A stronger impact of intention toward frequency of use in Hidaka city case compared to Kawajima city case was also found. These findings may imply that a higher service quality will enhance roles of psychological factors toward intention and the role of intention toward actual service use.

Finally, descriptive norm was found as the strongest determinant of intention. Moreover, the impact of satisfaction toward intention is lower compared to advantage of bus when the service quality is low (Kawajima city case). However, the impact becomes higher when service quality is high (Hidaka city case). A possible reason explained to the finding is that people may put a stronger weight on satisfaction and a lower weight on advantage of bus when service quality is increased.