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The Multidimensionality of the Quality of Customer Service Delivery Construct by Local Authority

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***Abstract*—A case is made to measure the quality of customer service delivery construct by local authority. This is measured based on service delivery information provided from Kajang Municipal Council Annual Report 2006. An exploratory factor analysis with varimax rotation was employed to assess the dimensionality of the quality of customer service delivery. The analysis extracted seven factors explaining 73.71 percent of the variation. The seven factors extracted can be grouped under complaining services, community development services, law enforcement services, environmental management services, basic amenities services, community health services, and street and light services. The factors extracted showed strong validity and reliability. The study recommends that the future studies are required to consider this quality of customer service delivery construct from the perspective of local authority.**

***Index Terms*—Malaysia, quality of customer service delivery, local authority, validity, reliability.**

I. Introduction

Within Malaysia, there are three levels of government: federal, state and local government. The local government or local authority is the lowest level in the system of government. At the local authority level, there are 418 councils within Malaysia and they are responsible to collect taxes (in the form of assessment tax), to create laws and rules (in the form of by-laws) and to grant licences and permits for any trade in its area of jurisdiction, in addition to providing basic amenities, collecting and managing waste and garbage as well as planning and developing the area under its jurisdiction. Local authority management has to be understood as part of the public domain but with its own special purposes and conditions reflecting its political nature and as organizations for the delivery of public services (Stewart 1988). The perceived inefficiency and ineffectiveness in the administration of revenue sources and poor delivery of services continue to impede the healthy and orderly development of local authorities in Malaysia (David Martin and Maziah, 2006). The question that almost always arises is in the adequacy of service provision: the efficiency, effectiveness and efficacy of local authorities in performance (Phang 1995).

Engaging citizens to evaluate the efficiency and effectiveness of local authorities is important in order improve the performance. As David Martin and Maziah (2006: 7) aptly puts it:

"Citizens can also act as partners in efforts to improve public services by assessing the performance of public services. Acting as "customers", citizens sometimes evaluate services simply by filling in a reply card after receiving a public service. As more deeply involved customers, citizens may become engaged in survey research or focus groups. At a still more involved level, citizens may become "evaluators" if they are trained as service quality raters to directly assess the performance of public services from street cleanliness, to library stack completeness, or to the quality of a public transport ride."

To date there has been some research examining whether local authority in Malaysia is efficient and accountable (e.g., Siddiquee 2008; Phang 2007; David Martin and Maziah, 2006; Mustafa 2006). Little is known about the measurement of quality of customer service delivery by local authority in Malaysia setting. In fact, Siddiquee (2008) highlighted that there is a dearth of scholarly work that provides detailed and objective assessment of such measures. This is somewhat surprising since quality of customer service delivery is a crucial component of the overall performance of the local authority. A better understanding of the right measurement is therefore an important first step in global performance evaluation of local authority. Thus, this paper takes as its unique focus, whether the instrument which is the quality of customer service delivery scale that is developed for this study is valid and reliable to the Malaysian local authority. The reason being to develop this scale is that the current instruments that are available might not be able to fully capture the variables/constructs that are of interest to the researchers. In other words the instrument is susceptible to measurement errors arising from the language used, the items used, and length of the instrument. As most of the researches done thus far have either adopted or adapted existing instruments there have not been many attempts at developing new instruments (Ramayah and Jantan 2004). We know that Malaysia himself is a multicultural society which is composed predominantly of Bumiputra, Chinese, and Indian. Once we have systematically developed the instrument for Malaysian cases, we hope to draw some conclusions and provide the best recommendations for future use this instrument particularly for local authority.

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II. METHOD

A. The Unit of Analysis and Population

The unit of analysis in this study is the residents of Kajang. They include low cost and medium cost housing. The population being studied involves 179,000 residents and this figure was taken from Kajang Local Planning 1998-2010.

B. Development of the Scale Items

This study measured the quality of customer service delivery by local authority based on Kajang Municipal Council Annual Report 2006. Forty items was developed and used to measure this construct, using a five-point Likert-type scale ranging from 1 = worst to 5 = very good is employed for all the quality of customer service delivery items.

C. Questionnaire Administration

Data was collected through a structured questionnaire, one for each housing unit. The principal investigator met the residents at their home during working hours and weekend. Each resident was then distributed a questionnaire attached with a covering letter guaranteeing confidentiality and informed consent for the research. Participants filled in the questionnaire anonymously. The principal investigator then collected the questionnaires either on the same day or two weeks later. For those who were unable to complete the questionnaire, assistance was given or an interview made by the principal investigator. Onsite editing of the questionnaires was made and double-checked at the university. The sampling frame is the Kajang Local Planning 1998-2010 which contains the detailed information pertaining to location and development type. The population was first stratified to location and type of development in order to get the various sub-groups of the population. The technique of sampling used in this study was basically convenience sampling but taking into account housing location and the different types of development. This will ensure that the various subgroups in the population are represented. A total of 650 questionnaires were distributed and only 638 was usable. As such the usable response rate is 98.15 percent.

III. RESULTS

A. Profile of the Residents

There were 61.8 percent males and 38.2 percent females. With regards to marital status, 85.2 percent of the residents were married, 3.6 percent were single, and 12.6 percent were divorced. They were predominantly Malay (67.2%), followed by Chinese (19.6%), Indian (12.7%), and others (0.5%). More than half (64.7%) of the residents belonged to young age group from 19 to 45 years old. About 73.7 percent had education below or equal to college diploma level. The large majority (81.7%) had an income of less than RM5,000 per month. A total of 314 (49.2%) respondents were from the low cost housing while 324 (50.8%) were from the medium cost housing.

A. Testing the Goodness of Measure for the Service Delivery of Local Authority Construct

1) Content Validity

Content validity refers to the extent to which an instrument covers the meanings included in the concept (Babbie 1992). Researchers, rather than by statistical testing, subjectively judge content validity (Chow and Lui 2001). The content validity of the proposed instrument is at least sufficient because the instrument is carefully refined from a proven instrument with an exhaustive literature review (Chow and Lui 2001).

2) Construct Validity

Based on the rotated component matrix, out of 40 items, 6 items were dropped as they either had loadings less than 0.5 or cross loadings. Seven factors met the selection criteria of eigenvalues greater than 1.0, explaining a total of 73.11 percent of the variance. The KMO measure of sampling adequacy was 0.87 indicating sufficient intercorrelations while the Bartlett's Test of Sphericity was significant (χ^2 = 15951.17, $p < 0.01$). All the items selected had factor loadings greater than 0.5.

Factor 1 contained 10 items and has been labelled as "Complaining Services". In Factor 2, 5 items were included and then labelled as "Community Development Services". Five items loaded onto Factor 3 and named as "Law Enforcement Services". Factor 4 consisted of 4 items and thus was labelled as "Environmental Management Services". Factor 5 included 4 items and represent as "Basic Amenities Services". Finally, Factor 6 and 7 only included 3 items for each factor and thus has been labelled as "Community Health Services" and "Street and Light Services". Table 1 presents the factor loadings obtained .

3) Convergent Validity

Further to the construct validity test using the factor analysis (between scales), another factor analysis was utilized but this time using the within scale to test the convergent validity. According to Campbell and Fiske (1959) convergent validity refers to all items measuring a construct actually loading on a single construct. Convergent validity is established when items all fall into 1 factor as theorized. All the seven factors displayed unidimensionality with Complaining Services, KMO = 0.90 explaining 67.51 percent of the variation; Community Development Services, KMO = 0.81 explaining 75.10 percent of the variation; Law Enforcement Services, KMO = 0.86 explaining 71.13 percent of the variation; Environmental Management Services, KMO = 0.81 explaining 77.11 percent of the variation; Basic Amenities Services, KMO = 0.81 explaining 68.15 percent of the variation; Community Health Services, KMO = 0.72 explaining 78.68 percent of the variation; and lastly Street and Light Services, KMO = 0.56 explaining 63.77 percent of the variation. Thus, it can be concluded that the convergent validity of these measures is valid.

4) Discriminant Validity

Discriminant validity refers to the extent to which measures of two different constructs are relatively distinctive. The correlation value of discriminant validity is neither an absolute value of '0' nor '1' (Campbell and Fiske 1959). A correlation analysis was done on the 7 factors generated and the results are presented in Table 2. As can be

seen all the 7 factors are not perfectly correlated where their correlation coefficients range between 0 and 1. Hence, we can conclude that discriminant validity has been established.

5) Reliability

Reliability refers to the degree of consistency, as Kerlinger (1986) puts it; if a scale possesses a high reliability the scale is homogeneous. According to Nunnally (1978) alpha values equal to or greater than 0.70 are considered to be a sufficient condition. We used the Cronbach alpha for inter-item consistency and the seven corresponding alpha values are 0.94, 0.92, 0.90, 0.90, 0.84, 0.86, and 0.70 for Complaining Services, Community Development Services, Law Enforcement Services, Environmental Management Services, Basic Amenities Services, Community Health Services and Street and Light Services respectively (Refer Table 2). Thus, it can be concluded that these measures posses sufficient reliability.

IV. Discussion

Most researchers rely on use and performance of instruments in other studies as culled from the standard literature review to establish the goodness of a measure. The primary focus of this paper was to test the dimensionality of quality of customer service delivery by local authority for the 40-item version. To a certain extent we have accomplished that by getting a 34 items service delivery instrument which is capable explaining sufficient variation in the construct being measured. This research showed that the instrument has reasonable levels of validity (content, construct, convergent, and discriminant) and reliability for continued use.

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TABLE 1: Factor Analysis Result for Quality of Customer Service Delivery.

Items	Factors						
	F1	F2	F3	F4	F5	F6	F7
Factor 1: Complaining Services							
CS2	.72						
CS3	.75						
CS4	.85						
CS5	.82						
CS6	.82						
CS7	.84						
CS8	.73	.33					
CS9	.81	.33					
CS10	.85						
CS11	.75	.30					
Factor 2: Community Development Services							
CDS1	.33	.68	.40				
CDS2		.76	.36				
CDS3	.36	.81					
CDS4	.31	.84					
CDS5		.79					
Factor 3: Law Enforcement Services							
LES1	.40	.33	.63				
LES2			.85				

Items	Factors						
	F1	F2	F3	F4	F5	F6	F7
LES3	.39		.69				
LES4			.83				
LES5			.84				
Factor 4: Environmental Management Services							
EMS2				.77			
EMS3				.85			
EMS4				.86			
EMS5				.80			
Factor 5: Basic Amenities Services							
BAS1					.67		
BAS2					.85		
BAS3					.82		
BAS4				.30	.70		
Factor 6: Community Health Services							
CHS1						.71	
CHS2						.86	
CHS3						.85	
Factor 7: Street and Light Services							
SLS3							.74
SLS4					.42		.69
SLS5				.35	.38		.67
Eigenvalue	10.58	5.64	2.82	1.85	1.62	1.46	1.09
Percentage of Variance	21.07	11.13	10.63	9.81	8.96	7.10	5.03
Total Variance Explained	21.07	32.19	42.82	52.63	61.58	68.68	73.71
KMO Measure of Sampling Adequacy				0.87			
Approximate Chi-Square				15951.17***			

Note. $N = 638$. Items included for the respective factors are underlined for identification; ***$P<.001$.

Factor loadings less than .30 have not been printed.

TABLE 2: RESULTS OF THE CORRELATION ANALYSIS

		1	2	3	4	5	6	7
1	Complaining Services	(0.94)						
2	Community Development Services	.51**	(0.92)					
3	Law Enforcement Services	.47**	.57**	(0.90)				
4	Environmental Management Services	.15**	.18**	.21**	(0.90)			
5	Basic Amenities Services	.04	.13**	.12**	.51**	(0.84)		
6	Community Health Services	.11**	.12**	.17**	.49**	.44**	(0.86)	
7	Street and Light Services	.18**	.22**	.22**	.41**	.49**	.45**	(0.70)

Note: Values in the diagonal are Cronbach alpha coefficients.