Customer Satisfaction with Services at the Ward Offices of Osaka City Government

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Abstract

Using an online survey, this study investigated determining factors related to customer satisfaction with counter services at ward offices (Kuyakusho) in Osaka City, Japan, focusing on direct experiences at these service counters. During a two-day survey period, responses from 400 women, aged 30–59 years, who had visited a ward office over a one-month period were collected. The questionnaire comprised three categories of multiple-choice questions: A) hardware (e.g., physical aspects), B) software (e.g., staff responses), and C) services (e.g., administrative services). Principal component analysis and multiple regression analysis were conducted on each question category concerning various aspects of public service provision. The regression analysis indicated that group C (service delivery quality) had the strongest influence on the dependent variables (ZY1), followed by group B and group A. Adjusted $R^2$ value is .60.

Keywords: ordinance-designated cities; counter service; customer satisfaction; Japan; large cities

1 Introduction

In this study, an online questionnaire survey was conducted among Osaka City residents. Female residents of Osaka City, aged 30–59 years, who had visited a ward office of the city over a one-month period were selected as the target segments of the survey. They responded to questions related to their level of satisfaction with counter services provided at these ward offices. Osaka City is the second largest city in Japan, while Yokohama City, the largest, is strongly influenced by the capital, Tokyo metropolitan area\textsuperscript{11} The pros and cons of applying the ordinance-designated city system to Osaka City are currently being discussed. Mr. Hashimoto, the former governor of Osaka Prefecture and mayor of Osaka City, had argued for the application of the Wide-area Administration system (Doshusei) (Jain, 2016, p. 171). The area around Osaka City, an ordinance-designated city, is one of the largest self-supporting urban areas in Japan, aside from the Tokyo metropolitan area. Tokyo has the To system (special treatment system for capital cities), different from
other large cities, and thus this study compares the survey results from Osaka City with those of Kurose Town, a rural area (Author, 2020).

With a view to proposing potential policy improvements, the author investigated the determinants of customer satisfaction regarding the public services provided by the ward offices, and the desired state of the ward offices in ordinance-designated cities. The author applied selective multigroup principal component regression analysis – a combination of principal component analysis and multiple regression analysis developed by Professor Emeritus Takahashi – to data collected through the online survey.

As revealed by Author (2020a), Gyosei Hyoka (government evaluations) has been implemented in Japanese local government since 2000, mainly in large cities, but also in some small towns and villages. The core of the methodology is the Jimujijo Hyoka, an ex-post evaluation of the entire project, which measures the results and summarises them in an evaluation sheet. Although the method has spread to many municipalities, resulting in improvements in administrative operations and changes in staff attitudes, more than 15 years after its initial introduction, the operational costs of the government evaluation system itself, including time and money, have become the focus in terms of the benefits of these evaluations related to organizational operations. Some local governments, including Kumano Town in Hiroshima Prefecture, have used more specific evaluation methods than Gyosei Hyoka, named Jimujijo Hyoka. Counter service customer satisfaction became the main focus of evaluation by local government officials. Kumano Town focused on the customer (Okyakusama) and introduced a checklist to ensure the implementation of specific administrative procedures for counter services in the local government. The town office also has a general information desk at the entrance, often found in large municipalities. A general information desk was common at private companies, but previously rare in Japanese local governments. The on-site survey by Kumano Town, during a two-month period in 2009, examined (1) the response of the staff to customers at each service counter and (2) the level of satisfaction with the checklist for preventing procedural omissions (Kumano Town, 2009). According to Kumano Town officials, the City of Hiroshima set up specific counters in ward offices to provide a single point of contact (one-stop counter) for the preparation of necessary documents and consultations in the event of a family member’s death. The Kumano Town has made a similar effort. The name of that office is the Okuyami Madoguchi (condolence counter). They can consult with officers or fill out necessary forms after the death of a family member at that counter only, and if they wish, they can be accommodated in a private room., a similar on-site survey regarding counter service improvement was conducted in 2018.

In addition to the counter service customer satisfaction surveys, many local governments in Japan, including the Higashihiroshima City government, have conducted citizen satisfaction surveys of policy areas (Sesaku Manzoku-do Chosa [Programs Satisfaction Survey]). To evaluate and position each programme based on importance and satisfaction level, randomly selected municipal residents were asked to complete questionnaires on various programmes currently provided by the local government.

This study investigated counter service customer satisfaction at ward offices of an ordinance-designated city through an online questionnaire survey by investigating the determinative factors concerning the customer satisfaction of residents. The study adopted the method implemented in the business management field by Takahashi & Kawasaki (2019). The advantage of this method was that it could avoid the problems of multicollinearity between question items by performing the principal component analysis beforehand.

1.1 Related Studies

Several studies on customer satisfaction with administrative programmes worldwide were reviewed previously in Author (2020a). In a noteworthy study, Wagenheim and Reurink (1991) focused on customer satisfaction in their public administration research. Their study included both internal and external customers, and they hypothesised that the satisfaction of internal and external customers’ service needs (customer service) had an influence on organisational efficiency and effectiveness. The author’s study of makes a novel contribution to the literature of Wagenheim and Reurink (1991) by examining the importance of each conceptual category.
related to counter service satisfaction regarding public services with an actual online questionnaire survey, in order to determine the relative importance of each conceptual category.

In the Japanese context, Professor Noda of Doshisha University conducted several studies on residents’ satisfaction regarding local government services. Some of the research was described in Author (2020b). Noda (2014) and Noda (2019) are English articles, published in international journals, on residents’ satisfaction from the perspective of administrative research. In Noda’s book (2013), citizen satisfaction in the Japanese context was described with reference to similar studies in foreign countries, especially in the United States, and a series of his subsequent studies were based on this book. Yamaoka and Hideshima (2013) applied information management perspectives to studies of customer satisfaction with administrative services at the Japanese local governments.

Many studies have focused on satisfaction of citizens and customers in the context of various countries (Mansor and Razali, 2010; Cripps, Ewing, and McMahon, 2004; Akinboade, Kinfack, and Mokwena, 2012). This study referred to the framework used by Mansor and Razali (2010) in Malaysia. The author’s study is based on the questionnaire in Author (2020a), in which specific question items were grouped into three categories, originally developed by Mansor and Razali (2010).

1.2 Outline of the Research Design

The author designed the questionnaire on the basis of three main factors: hardware (e.g., physical aspects), software (e.g., staff responses), and services (e.g., administrative services) (Author, 2020a). It was based on the three explanatory categories used by Mansor and Razali (2010). First, principal component analysis was used for question items within the three categories to extract two principal components from each category. In the multiple regression analysis, principal components extracted from each category were selected as explanatory variables for the explained variable (ZY1), previously referred to as ‘the selective principal component regression analysis’ by Kawasaki, Takahashi, and Suzuki (2014).

The author’s assumptions concerning the relationships between variables related to customer satisfaction at ward offices of ordinance-designated cities are illustrated in Figure 1. The principal component analysis within the three categories extracted the first and second principal components, which are used as the explanatory variables in the following multiple regression analysis.

Figure 1 Research analysis model of the survey of the Osaka City residents

![Figure 1](image-url)
2 Methods

Online surveys were distributed to residents of Osaka City through Rakuten Insight, an online survey company. Rakuten was originally a Japanese internet shopping site with a large proportion of middle-aged female members. Respondents registered as Rakuten Insight monitors in advance. Rakuten Insight’s monitors joined the general survey panel by agreeing to the Monitor Agreement and Privacy Policy. These terms and conditions are posted on the company’s website and are available for public review. The company has a system to protect personal information when conducting surveys and has the Foundation of JIPDEC’s Privacy Mark certification. An explanation of these privacy protection policies and terms was included at the beginning of this online survey as well. In addition, prior to the questions following the screening questions regarding respondents’ attributes, it was clearly stated that: (1) the author is responsible for carrying out the survey, and is willing to answer questions about it (including questions about the results of the survey, later published in academic journals) through a web form, and (2) the survey participation is voluntary and is not related to the city government. Respondents would not be judged unfavourably based on their survey responses.

There were 10 survey questions and two screening questions concerning respondents’ conformity to survey conditions beforehand. The survey was conducted on two weekdays (October 13–14, 2020). There were a total of 400 respondents: 179 (44.8%) were in their 30s, 123 (30.8%) in their 40s, and 98 (24.5%) in their 50s.

Based on the three concept groups, Table 1 illustrates the question items to evaluate customer satisfaction regarding counter services in municipal governments. The questionnaire also requested responses concerning individual personality and tendency: (I) international, (F) authoritarian tendency, and (M) thoughts about management aspects of public administration, and posed a final open-ended question regarding how to improve the ward offices.²

Table 1 Question items in three explanatory categories

<table>
<thead>
<tr>
<th>Concept Groups</th>
<th>Question Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>A) Office hardware (buildings, tables, chairs, lighting, and others)</td>
<td>AQ1(Q4_1) Location (access from home or work)</td>
</tr>
<tr>
<td></td>
<td>AQ2(Q4_2) Tables and chairs</td>
</tr>
<tr>
<td></td>
<td>AQ3(Q4_3) Indoor atmosphere</td>
</tr>
<tr>
<td></td>
<td>AQ4(Q4_4) The clarity of the layout of the building</td>
</tr>
<tr>
<td></td>
<td>AQ5(Q4_5) The clarity of the layout of the office site</td>
</tr>
<tr>
<td></td>
<td>AQ6(Q4_6) Lighting</td>
</tr>
<tr>
<td>B) Office software (customer service provided by the counter staff)</td>
<td>BQ1(Q4_7) Length of time to complete customer requests</td>
</tr>
<tr>
<td></td>
<td>BQ2(Q4_8) Courteousness of the staff in charge</td>
</tr>
<tr>
<td></td>
<td>BQ3(Q4_9) Ease of consultation and asking questions</td>
</tr>
<tr>
<td></td>
<td>BQ4(Q4_10) Clarity of explanation given by the officer</td>
</tr>
<tr>
<td>C) Service quality</td>
<td>CQ1(Q5_1) Customer requests were completed</td>
</tr>
<tr>
<td></td>
<td>CQ2(Q5_2) The problem was solved after this visit</td>
</tr>
<tr>
<td></td>
<td>CQ3(Q5_3) The worries and concerns of customers were alleviated</td>
</tr>
<tr>
<td>Y) Degree of customer satisfaction with counter services at the branch office</td>
<td>YQ1(Q6_1) Level of customer satisfaction with the visit</td>
</tr>
<tr>
<td></td>
<td>YQ2(Q6_2) I want to tell people about my experience</td>
</tr>
<tr>
<td></td>
<td>YQ3(Q6_3) Convenience of the administrative services</td>
</tr>
</tbody>
</table>
3 Results

The results of the principal component analysis for each question in category Y are illustrated in Figure 2. This figure shows how the three questions on overall satisfaction (Y category) are positioned with respect to the first and second components calculated in the principal component analysis. The principal component scores of ZY1 and ZY2 were added to the dataset as new variables. Concerning component 1, YQ1, YQ2, and YQ3 experience a similar trend. YQ3 has a marginally higher value for component 1, interpreted as ‘delivered service convenience’. YQ2 and YQ3 exhibit a similar trend concerning the second principal component, interpreted as ‘experience satisfaction’. The correlation coefficients between ZY1 and each of the question items in groups A to C are shown in Table 2. The question items underlined were selected and will be used in the following principal components analysis for each group.

Figure 2 Factor loadings related to Y (overall customer satisfaction with counter services)

The results of the principal component analysis for questions in category A were displayed in Figure 3. AQ2(Q4_2), AQ3(Q4_3), and AQ5(Q4_5) experience a similar trend concerning component 1, interpreted as ‘indoor atmosphere and facilities’, with the AQ3 value marginally higher. AQ2 and AQ3 have the same tendency concerning the second principal component, while AQ5 demonstrates a different trend. We interpreted component 2 as ‘office layout clarity’. ZA1 and ZA2, the first and second components, were added to the dataset as new variables.

Figure 4 illustrates the results of the principal component analysis for each question in category B. The principal component scores for the first and second components were also added to the dataset (ZB1 and
ZB2). Quite clearly, BQ1(Q4_7) demonstrates a different trend for component 2, interpreted as ‘waiting time at the branch office’. The other three items, BQ2(Q4_8), BQ3(Q4_9), and BQ4(Q4_10), exhibit a similar trend. The author interpreted component 1 (ZB1) as ‘how officers deal with and explain issues to customers at the counter’.

Figure 5 presents the results of the principal component analysis for category C. As with the other categories, the principal component scores of ZC1 and ZC2 were added to the dataset as new variables. CQ2(Q5_2) has a marginally higher value concerning component 1, interpreted as ‘problem solving’, while CQ1(Q5_1) and CQ3(Q5_3) exhibit an opposing trend concerning component 2, interpreted as ‘alleviation of customer’s worries and concerns’.

![Figure 3 Factor loadings related to A](image-url)
Table 2 reveals the outcome of the multiple regression analysis on ZY1. The model uses synthetic variables ZA1, ZB1, ZB2, ZC1, and ZC2 by the variable increasing and decreasing method. The variable ZC1 was the highest at .43 with the significance level of 1%, according to the standardised partial regression coefficients of each variables. Defined as ‘problem solving’, ZB1 was the most important explanatory variable (ZY1). Both ZB1 and ZA1 had positive effects on the objective variable, in that order (significance level of 1%). The magnitude of the partial regression coefficients representing the level of influence of ZC1 and ZB1 are similar. We can interpret that independence among selected explanatory variables was maintained because each VIF was under 2.00.

Table 2 Multiple regression predicting overall customer satisfaction (component ZY1)

<table>
<thead>
<tr>
<th></th>
<th>Zero Order r</th>
<th>β</th>
<th>p</th>
<th>VIF</th>
</tr>
</thead>
<tbody>
<tr>
<td>ZA1</td>
<td>0.489**</td>
<td>0.14**</td>
<td>.0003</td>
<td>1.54</td>
</tr>
<tr>
<td>ZB1</td>
<td>0.658**</td>
<td>0.38**</td>
<td>&lt;.0001</td>
<td>1.78</td>
</tr>
<tr>
<td>ZB2</td>
<td>0.107*</td>
<td>0.11**</td>
<td>.0005</td>
<td>1.01</td>
</tr>
<tr>
<td>ZC1</td>
<td>0.628**</td>
<td>0.43**</td>
<td>&lt;.0001</td>
<td>1.26</td>
</tr>
<tr>
<td>ZC2</td>
<td>-0.127*</td>
<td>-0.07*</td>
<td>.0248</td>
<td>1.02</td>
</tr>
</tbody>
</table>

Figure 4 Factor loadings related to B

Figure 5 Factor loadings related to C
4 Questions for Future Research

With regard to the additional questions I, M, and F, we summarised each of them as in the principal component analysis and analysed their correlation with the explanatory variable ZY1. Only the co-relationship with ZF1 was significant at 5% (r = .126). However, the correlation coefficient was low, and even if we focus on this category of questions in the future, it may be necessary to revise the composed question items or consider it in the analysis method.

Regarding other questions in the questionnaire, question 2 asked how long it took to get to the respondents’ ward office from their home or place of work. The maximum time was 60 minutes and the average was 15 minutes. In question 3, respondents were asked how they reached the ward office and 10.0% said that they used their car. This proximity to municipality’s offices and the choice of transportation options would differ from the rural Kurose Town studied by the author (2020). Question 8 asked whether respondents had used the main office of Osaka City Hall within a year, and 47 (11.8%) answered positively. In Kurose Town (Author, 2020), this figure was 55.6%. This indicates that in ordinance-designated cities, most of the important business can be done at the ward offices, and these differences in the nature of municipal offices may have caused the inconsistency between this study and that of Author (2020).

5 Conclusion

In this study, online survey was conducted, targeting female customers of ward offices of the Osaka City government. To ascertain the determining factors concerning counter service customer satisfaction at the ward offices of ordinance-designated cities (large cities) in Japan, a two-step statistical analysis was conducted, comprising principal component analysis and multiple regression analysis. Question items were presented in three specific categories – A, B, and C. Multiple regression analysis used two principal components calculated from each category. The regression analysis (Table 2) demonstrated that group C was most influential on the dependent ZY1, followed by ZB1 and ZA1, with the adjusted $R^2$ value of .61.

For the explanatory variables A–C, the most influential variable was ZB1 ($\beta$ was .45). The regression coefficients for each variable showed that the most important variable was service delivery quality (group C). This result was marginally different from a previous study by Mansor & Razali (2010) in Malaysia, which revealed that human factors were more important than administrative services themselves.

The order of influence of each explanatory variable in the study conducted by the author at the Kurose branch office of Higashihiroshima City aligned with the study in Malaysia, but there were differences in the results between the study at the Kurose branch office and the study in Osaka City. These dissimilarities can be attributed to a variety of factors, one being the difference between urban and rural areas; rural areas tend to experience a stronger sense of community and a higher regard for human relationships. Another possible explanation is that although Osaka is a large city, its commerce has been developing since the Edo period, and it has a more utilitarian atmosphere than other cities. It is difficult to test these two possibilities from the author’s two-city comparative studies alone, and we would like to examine the impact of urban/rural characteristics on the determinants of citizens’ service satisfaction in detail by conducting a similar follow-up experiment in the Tokyo metropolitan area.

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References


Author. (2020b) “A questionnaire survey on customer satisfaction with services at branch offices of Higashihiroshima City in Hiroshima Prefecture: Focusing on office hardware, customer service provided by counter officers, and service delivery quality” *Advance*, Preprint.


Notes: The English titles in parentheses are the author’s translation of the original Japanese titles.

3 The question items on authoritarian personality are based in part on a Japanese version of the scale presented in Adorno et al.’s co-edited book (the so-called F scale), translated and actually field-tested by
Inamine (1960) in Okinawa Prefecture. For the measure of internationality, three items from Yashima’s (2002) twenty items were used.