Tropical Technology Journal
Volume 18, Issue 1 (2015)
ISSN: 1656-0264

Quality and Reliability, Price, Communication and Power Facilities as Predictors of Household Satisfaction to Power Utility Services

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ABSTRACT

The Central Visayas Region in the Philippines envisions being the center of tourism, trade and industry. Thus, this study investigated the relationship between household overall satisfaction to power utility services in Cebu City and satisfaction attributes. A researcher-developed questionnaire was used for this household survey research to gather data from 377 households of the 50 urban Barangays in Cebu City, Philippines. Statistics used were percentages, means, and standard deviations, multiple linear regression and analysis of variance. Thirteen attributes (power quality and reliability, billing and payment, corporate citizenship, price, communication, customer service-staff, customer service-paying center, customer service-power facilities, kilowatt-hour consumed per month, amount due, educational attainment, age and number of household members) were assessed out of which only four (4) attributes showed a significant relationship with household overall satisfaction. No significant difference was found on the level of overall satisfaction among households on the cluster membership based on demographic variables. It was concluded that household customer satisfaction is not dependent on socio-economic status but is significantly related with quality, price, communication and power facilities of the power utility services. Other utility services satisfaction can be simultaneously done for a comprehensive view on the part of tourists, and the trade and industry sectors.

Keywords: Management, power utility services, household customer satisfaction, descriptive method, multiple linear regression, Cebu City, Philippines

INTRODUCTION

In the Central Visayas region, one of its long-term visions is to be a leading growth center in the country by 2030. It envisions in particular for Central Visayas to be a premier tourist destination, and a center of trade and industry, science and technology and information and communications technology (ICT) innovation in the country. As such, it is best to determine if the current electric utility provider has the capacity to support the long-term visions from the point of view of the end-users' level of satisfaction. Recommendations generated from this study could be the first giant steps to be made in the further improvement of the utility provider before 2030.

 ISSN: 1656-0264

The study is significant considering that no similar collaborative study of this magnitude, that is covering the entire Cebu City, has been conducted in the recent past that could provide information for basis of improving the quality of service of the power utility providers.

On the local Cebu level, this study will provide vital information as to what variables will significantly determine the levels of satisfaction for power consumers. This information will signal the power utility providers what measures to take to achieve high satisfaction levels.

Moreover, the study on customer satisfaction is very timely as Cebu Technological University (CTU) has been ISO certified since 2003. This ISO certification entails customer focus as well as other principles that ISO is founded into for continual improvement. Thus, this collaborative study by different educational institutions in Cebu will advance customer focus understanding and enable educational institutions to cope with ever changing customer behavior for continual improvement.

Several studies have been conducted worldwide on customer satisfaction verifying, modifying and some creating models of customer satisfaction. Lumpoopinijpong (2007) did a study on tourist customer satisfaction in Thailand while Lape and Cabrigas (2008) recently conducted customer satisfaction survey on water services in Metro Cebu commissioned by the Metro Cebu Water District (MCWD). These studies were intended to know more about customer satisfaction which according to Oliver (1993) everyone knows what satisfaction is, until one is asked to give a definition. Although the paradigm shift towards customer satisfaction is getting apparent, the challenge to manage it also proportionately grows (Kotler& Lane 2006). B2B market research experts Hague and Hague (2009) stated that statistics are bandied around that suggest that the cost of keeping a customer is only one tenth of winning a new one.

Oliver (1993) defines satisfaction as the consumer's fulfillment response. He emphasized that satisfaction is judgment that a product or service feature provides in terms of a pleasurable level of consumption-related fulfillment. In simpler terms, customer satisfaction is the customer's evaluation of a product or service in terms of whether that product or service has met their needs and expectations.

The definition then would invite for a determination of parameters of satisfaction which are discussed in several studies. To simplify these determinants let us go over with different measurement models of customer satisfaction. The model presents the idea that customer satisfaction is measured by the perceived quality and customer expectations.

In addition, the European Model of customer satisfaction framework considers image, customer expectation, and perceived quality of product/service as variables that affect customer satisfaction. On the other hand, Lumpoopinijpong (2007) detailed the determinants of customer satisfaction. Her study verified the perceived determinants to include service features, perception of quality, consumer emotions, attributions for service success or failure, perceptions of equity or fairness, other consumers, family members, and co-workers. An earlier assertion on customer satisfaction is that of Churchill et al. (1982). He averred that dissatisfaction occurs when

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a consumer's expectations are negatively disconfirmed, that is the product or service performance is less than expected. Nevertheless, Latu and Everett (2000) disputed that expectancy-disconfirmation model is incomplete given that it lacks considerations of the importance of the attribute to the customer concluding further that satisfaction has been conceptualized and measured as a function of the multiple satisfactions derived from a spectrum of specific, separate experiences elements.

Furthermore, according to Pecheux (2003), customer satisfaction has been increasingly used as a measure of performance of transportation systems. This concept of considering customer satisfaction as a measure of performance has been well established in the principles behind ISO latest standards. These related studies also manifest the fact that considerable efforts have been done on customer satisfaction and yet it remains a good subject for scientific inquiry because it poses a puzzle if these different attempts are to be considered.

On the other side of customer satisfaction, Fleming and Asplund (2007) pointed out that customers want more than "satisfying" transactions. In fact, customers also look into the possibility of having an engaging relationship with the service providers. Furthermore, empirical results of case studies showed that customers who are extremely satisfied can be classified into distinct groups – the emotionally satisfied and the rationally satisfied. Emotionally satisfied customers tend to be extremely satisfied with the product services as well as develop a strong attachment to the service provider. Those customers who are rationally satisfied with the product and service tend to lack emotional connection with the company.

In a recently released utility business customer satisfaction study in the U.S. by J. D. Power last February 5, 2009, it reported that overall customer satisfaction is measured by examining six factors: 1) power quality and reliability, 2) billing and payment, 3) corporate citizenship, 4) price, 5) communications, and 6) customer service. This study was based on interviews from 15,400 US businesses that spend between $500 and $50,000 monthly on electricity that were served by 90 utility brands during April to June 2008 and September to December 2008. From the article, one can glean some of the aspects that possibly comprised each of the six factors. For power quality and reliability, it looked into power supply availability and its quality.

For billing and payment, it looked into its ease of understanding the billing entries, its access to payment centers, and availability of payment modes. For corporate citizenship, it referred to the brand and the company image. For price, it checked the reasonableness of the price, the energy rebates, and types of pricing offered. For communications, it checked on its modes of communication from company to consumers whether it were thru mail, website, print media, TV and radio. It also investigated the topics or the information communicated by the company whether it was about power outages and price changes among others. The frequency of communications was also considered. For the customer service, it surveyed how well the customers were treated by the front office staff and the office administrators when they brought their concerns in the head office. It also checked the treatment bestowed on the customers by the company's field staff and field supervisors when they had their power connections installed or re-installed if ever their power service were discontinued. If the company has a call center

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service, the service rendered by the call center agents will also be evaluated.

The six factors mentioned in JD Power (2009) will be used as the same criteria to measure customer satisfaction for the electric utility services in this study for the households. Households in the 50 communities in Cebu City are the identified respondents for this sector.

The attempt of this study to grasp customers' satisfaction will be incomplete without the knowledge about the customers themselves. Demographic variables are the most popular bases for distinguishing customer groups which consists of dividing the market into groups on the bases of variables such as age, income, occupation, education (Arnold et al., 2002). Demographics clearly influence consumption behaviors both directly and by impacting upon other attributes of individuals, such as their personal values and decision styles (McCarthy & Shrum, 1994).

Consumer's purchasing decisions will change with age (Drummond& Esnor, 2005). He added that women with age range of 25-35 will have different needs from those men of the same age range. Moreover, Neal and Hawkins (2004) stated that as education levels increase, many preferences are expected to change in the demand for consumer goods, personal computers and internet access. Justifying the need that marketers should recognize the education level of target markets in order to reach and communicate with them effectively. In addition, Philip et al. (2002) contend that occupation also influences consumption patterns. Lastly, Peter and Olson (2005) averred that people at different income levels tend to have quite different values, behaviors and lifestyles.

The most widely used model within the customer satisfaction/dissatisfaction (CS/D) literature is the disconfirmation paradigm (Oliver &Burke, 1999). Disconfirmation also has been advanced as a model for understanding the customer's reactions to recovery (Oliver 1980). Accordingly, the disconfirmation paradigm holds that customers compare perceived product or service performance to expectations. Performance that exceeds expectations is positively disconfirmed, performance that meets expectations is confirmed, and performance that falls short of expectations is negatively disconfirmed. In general, the more negatively the disconfirmation, the greater the dissatisfaction, whereas the more positive the disconfirmation, the greater the satisfaction.

Moreover, McCollough et al., (1992) has empirically evaluated the disconfirmation model of recovery. They maintained that satisfaction is a function of initial disconfirmation and recovery disconfirmation. Initial disconfirmation is defined as the discrepancy between failure expectations (expectations that the service might fail) and service performance (initial service performance perceptions, as either successful service performance or failure). Recovery disconfirmation is defined as the discrepancy between recovery expectations (expectations by the consumer regarding what the service provided will do given failure) and recovery performance (perceptions regarding steps taken by the service provided in response to failure).

The researchers intend to determine the effect of power utility services attributes on households' overall satisfaction and if there are differences in households' perception based on

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the cluster membership per demographic variable. The study is guided by the following researchers' hypotheses:

H1: There is a significant relationship between household overall satisfaction and power utility services attributes which include power quality and reliability, billing and payment, corporate citizenship, communication, customer service-staff, customer service-paying center, customer service-power facilities and some identified demographic variables such as age, educational attainment, amount due for payment, kilowatt-hour consumed and number of household members.

H2: There are differences on the household overall satisfaction in terms of the demographic characteristics such as gender, civil status, and role in the family, number of meters installed, and providers of payment for the bill.

MATERIALS AND METHODS

The Study Site

This study was conducted in Cebu City, Philippines. Cebu City has 80 communities, and for this study only the 50 urban communities were considered. Cebu City has a total population of 799,72 persons as of August 1, 2007 with 177,197 number of household and the average size per household was 4.5 persons. In 2007, the median age of the household population of the city was 23 years, while the size of the voting-age population (18 years old and over) was 497, 219 accounting for about 62.8 percent of the household population. Moreover, about two-thirds (66.1 percent) of the household population belonged to the working-age population (15 to 64 years) (NSO, 2010).

Research Design

This study used descriptive research method and confirmatory regression analysis with the survey as the method of data gathering and the questionnaire as the main tool for primary data collection.

Target Population and Sample Size

The target population of the study was the household customers of the power utility services in Cebu City. Household customer was represented by the one who mainly provide for the payment of the bill or the one knowledgeable of the bill. Flieger (2004) reports in 2000 a total household population of 128,699 for the 50 urban barangays in Cebu City. A stratified sampling design was used in the study. Using a confidence level of 95%, error of 5% and proportion of 50% a sample size of 400 households is derived of which proportionate sample size was selected from each of the 50 barangays.

Instrumentation

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The researchers developed the questionnaires based on the knowledge derived from review of literature integrating Tourist Satisfaction Model, Customer Satisfaction Determinants, Customer Satisfaction Measurement Models and Feedback Model of Service Delivery. The questionnaire has two parts. Part I includes questions about the respondents' personal information while part II asks about the respondents' satisfaction with the services. All survey responses on customer satisfaction were made on the 5-point Likert-type scale with a rating from very much dissatisfied (1) to very much satisfied (5).The individual indicator was measured by combining the mean of its sub-items and dividing by the number of sub-items. This gives means of each interrelated indicator ranging from 1 to 5.

The content validity of the instrument was obtained by getting experts in power utility services during the design of the study to scrutinize the instrument. Also, 10 members of the research team and 3 experts from the CHED-Zonal Research Center convened to finalize the instrument. The reliability of the instrument was measured using Cronbach's Alpha with a coefficient of .74 which indicates high scale measurement reliability.

Data Collection

Questionnaires were administered to 400 household respondents distributed throughout the 50 identified communities. After three weeks of data gathering and using three attempts to call for complete data for each household respondent, 400 questionnaires were retrieved. However, after thorough editing and filtering of the retrieved questionnaires during data processing 13 questionnaires were discarded out of 400 retrieved ones.

Data Analysis

Data analysis was done using the Statistical Packages for Social Sciences (SPSS) version 17 for Windows and Minitab version 17 to statistically analyze the collected data. Descriptive statistical measures were used to summarize the demographic characteristics of the households, compute the mean perception to the power utility services satisfaction attributes and the overall satisfaction. Multiple regression analysis was used to determine the relationship and significant predictors of the overall satisfaction while Multivariate Analysis of Variance (MANOVA) was used to answer inquiry on significant differences on overall satisfaction on the perception of cluster membership based on demographic variables.

RESULTS AND DISCUSSION

Demographic Characteristics of the Households, Satisfaction Attributes

The sample has more females than male household representatives (male, 37.4%, female, 62.6%) as 74.8% of the total respondent were married while 99.7% are Filipinos and only .3% was Chinese Citizen. The age distribution shows majority of the household respondents were in the age range of 41 – 50 (28.2%) with the mean age of 44.74.

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When it comes to paying roles, majority of the respondents were the one who provides the money and goes to pay center to pay bills (49.1%) followed by those who goes to pay to the center but does not provide the money (33.2%). Moreover, most of the household respondents were spouses of the household head (40.6%) followed by household head (38.5%).

Household respondents of the study were mostly at least college level without graduate studies (48.4%) as only 5.8% were at most elementary graduates. Majority of the respondents have an average personal monthly income which was Php 5,000 and below (30.5%) while only 2.1% of the respondents were earning at least 50,000 per month.

The median monthly electric consumption of the household respondents was Php1,362.00 with a minimum of Php90.00 and a maximum of Php45,175.00. The monthly median electric consumption was 160.5 KWH with a minimum of 10 KWH and a maximum of 1000 KWH.

Overall, majority of the respondents said they were satisfied (54%), 26% were partially satisfied, while 6% where at most dissatisfied. On the other hand, the highest mean perception among the eight (8) satisfactions attributes (power quality and reliability, billing and payment, corporate citizenship, price, communication, customer service-staff, customer service-paying center, and customer service-power facilities) was on customer service in the paying centers (4.40) while communication got the least mean of 3.06.

Relationship between Household Overall Satisfaction and Power Utility Services Satisfaction Attributes and Selected Demographic Characteristics

The result of the confirmatory multiple regression analysis shows that there is a significant relationship between overall satisfaction and some significant satisfaction attributes and selected demographic characteristics (R^2= 34.4%, $p < .001$). Out of the eight (8) satisfaction attributes, four (4) supported the first hypothesis (quality and reliability, t=2.45, p =.015; price, t = 3.13. p =.002; communication, t=2.26, p=.025; and power facilities, t=4.39, p <.001) and none were found significant from among the identified demographic characteristics.

Differences on the Household Overall Satisfaction in Terms of the Demographic Characteristics Such as Gender, Civil Status, Role in the Family, Number of Meters Installed and Providers of the Payment for the Bill

Multivariate Analysis of Variance (MANOVA) results show that overall satisfaction were not significant in terms of the identified demographic characteristics such as gender (F=0.63, p=.429), civil status (F = 0.24, p=.867), nationality (F=0.19,p=.662), paying role (F=0.38,p=.681), household role(F=0.92,p=.478), number of meters installed (F=0.71,p=.493), and highest educational attainment (F=0.63,p=.786).

Moreover, MANOVA results show the statistical significance of the aforementioned demographic characteristics on the combined dependent variables which revealed that only the paying role (Wilks' Lambda = 0.89622, p = .013) is significant others were not such as gender

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(Wilks' Lambda = 0.98616, p = .089), civil status (Wilks' Lambda = 0.92669, p = .650), nationality (Wilks' Lambda = 0.95964, p = .174), household role (Wilks' Lambda = 0.88820, p = .963), number of meters installed (Wilks' Lambda = 0.94851, p = .566) and educational attainment (Wilks' Lambda = 0.74170, p = .371). ANOVA results also show that paying role is only significant on the dependent variable Billing and Payment, and on the variable price.

The study shows that some satisfaction attributes significantly predict overall household satisfaction to the power utility services as level of satisfaction is found significantly different on the role of paying the bill. These claims are partially supported by the result of the multiple regression analysis and multivariate analysis of variance. The result of the multiple regression analysis revealed some satisfaction attributes (quality and reliability, price, communication, and power facilities) are predictors of the level of household overall satisfaction. The high perception on the Quality and reliability which refers mainly to consistency and adequacy of power supply in Cebu City indicates minimal outages and/or low voltage problems encountered. Relatively low satisfaction on price means household members found the price is appeared to them not reasonable and that they have difficulty in understanding the types of pricing offered.

On the other hand, low perception on communication could be attributable to the lack of available modes of communication to the power utility that household members are capable of such as email, website, print media, and other information technologies. This would also mean that price changes advisory, power outages advisory, listening skills of telephone operators and time taken to respond to telephone calls were not highly appreciated. Moreover, power facilities varies with overall satisfaction because household members were assured on the accuracy and readability of the electric meter installed by VECO as well as the quality of the electric post, electric wires and transformer installed. Thus, these attributes could be packaged and manipulated by way of strategy formulation to increase overall satisfaction. The basic theoretical underpinning is that the power utility services satisfaction attributes that are explanatory to the household overall satisfaction should be factored into the product development and marketing strategy.

Although there were non-significant satisfaction attributes in predicting overall satisfaction, the descriptive results of these factors are worth discussion. Results on Billing and Payment mean that Household members received their bills every month as expected on or before their due dates indicating further that the company has an efficient delivery system, though at times delivery is not as expected. In addition, the findings denote that Household consumers assumed that since the billing process is automated there is less percentage of error and that if there are any; it can be adjusted as soon as reported.

Customer's perception is an important factor that influences satisfaction. Satisfaction from service quality is usually evaluated in terms of technical quality and functional quality (Gronroos 1984).Usually, customers do not have much information about the technical aspects of a service; therefore, functional quality becomes the major factor from which to form perceptions of service quality (Donabedian 1980, 1982). Service quality may be defined as customer perception of how well a service meets or exceeds their expectations (Czepiel 1990).

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Service quality can be measured in terms of customer perception, customer expectation, customer satisfaction, and customer attitude (Sachdev & Verma 2004).

Likewise, the findings on customer service – staff reveal that the overall household customers were satisfied on the customer service-staff of the power utility company. They gave their highest satisfaction on the aspects of appearance and grooming of front office and security guards. On the other hand, the household respondents indicated their two lowest satisfactions on treatment of customer service-staff when they brought their concern on power distribution and on the fulfillment of promise made by the company field staff. These findings signify that customers are not having so much problems regarding personality of service staff while these customers have stressed their dismay on the under-fulfillment of service staff relating directly on the problems on power supply.

On the part of paying centers, the satisfaction level of the respondents on the two service benefits offered by VECO: the paying centers and the power facilities. In the paying centers, the objective is to give comfort to customers while the customers are paying their bills or while they are waiting for their turn to pay the bill. The second objective is to make the paying centers accessible to customers. The main paying center of VECO is at the 3rd level of SM City Mall in Reclamation Area. SM Mall is accessible to many residential areas in Cebu City with a taxi and jeepney terminal nearby. It has ample parking space for its customers and security service is at its excellent. The paying center is spacious, air-conditioned with cushioned seats available for customers to rest on. There are 6 teller stations that accept customer payments and entertain queries and complaints.

The fact that demographic variables did not show significant difference in household overall satisfaction shows that they are not explanatory factors of satisfaction in power utility services. Socio-economic status could not be used for segmenting power utility market and targeting. Likewise, marketing implication of this finding is that, behavioral variables are not good segmentation bases for power utility services.

Given the contribution of this study to the understanding of customer satisfaction to the power utility services, it can be suggested that similar wide-ranging study on other utility services such as those in water, land transportation, and shipping and even to tourism.

CONCLUSION

There is a collection of attributes that affect overall household satisfaction of the power utility services. In this study, four attributes (quality and reliability, price, communication, and power facilities) were found to be explanatory of the level of household overall satisfaction on the power utility services. When these variables are essentially considered into the development and marketing of power utility services, it would go along with improving household customer satisfaction. Both behavioral and socio-economic variables may not be considered right from the outset of power utility marketing and service development as we have no sufficient evidence that it will considerably affect level of household satisfaction.

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