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Customer Satisfaction Regarding Electronic Payment System in Villages of North West Bengal: A Factor Analysis

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Abstract

Purpose- The objective of this paper was to assess the various customer satisfaction level in the villages of 'Malda' district of north West Bengal. This cutomer satisfaction is regarding the effect of electronic payment system.

Design/Methodology/Approach- The paper in the first phase was exploratory in nature as the researcher explored the various customer satisfaction attributes or variables of (20 finally identified) through secondary data (research papers). In the second phase, empirical study was conducted by collecting the primary data from 100 valid respondent. Convenience sampling was used for the same purpose and demographic profile tabulations were not emphasized herewith. Five point Likert's scale based questionnaire was used for collecting responses after personally meeting with the respondents. Furthermore, factor analysis technique through SPSS was applied for dimension reduction and reaching out to conclusions. This research paper serves as a model study for the entire research work of a researcher.

Findings- Researcher had explored total twenty (20) variables of customer satisfaction regarding the electronic payments in the villages of north West Bengal.Consequently, after the application of dimension reduction technique composition of six factors were explored. Respondents are satisfied with the electronic payment system especially for their business needs. However, the awareness for the electronic payments to be increased in rural areas.

Practical Implication-The research was practically significant villages of north West Bengal are prominently moving towards the electronic payment system. So study was practically viable from their perspective.

Originality/Value- The research was highly original being empirical in nature and the primary data had been used for collecting the responses.

Keywords – Customer satisfaction, Electronic payment system, Villagers, Malda District, North West Bengal

Paper Type – Research Paper

1.   Introduction

Customer satisfaction is referred as the extent to which customers are happier and comfortable with the products and services offered by a business.Customer Satisfaction has been a corea rea which has received considerable attention by many researchers in the last few decades. It is a measure as to how product sand services meetorex ceedex pectations of the customer. Customer Satisfaction plays a crucial role in today's business scenario. It not only indicates customer loyalty, reduces agitation of the customers, contributes an increase in there venue but

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also helps attract new customers towards he business. Today, Electronic payment framework is quickly spreading in our nation. It is to make India Digital. E-payment assists with developing economy and making the digital India. The policies are coordinated towards distinguishing and highlighting what number of people know about electronic payment and are utilizing the methods of electronic payment like utilizing cards, utilizing online payment applications, net banking, mobile banking, Google wallets and so on. After demonetization, electronic payment mode has picked up speed.The purpose of this paper is to explore the various factors related to customer satisfaction regarding electronic payment system in villages of 'Malda' district of north West Bengal and to reduce them to manageable factors using 'Factor Analysis'. Factor analysis is a data reduction method. It is very useful method to reduce a large number of variables resultingin data complexity to a manageable factors.

2. Literature Review

As far as literature review is concerned, there are significant amount of past studies and researches available related to the customer satisfaction regarding electronic payments in Indian context. These researches had been already covered in previous research papers. Major gap existed as the research was missing in the rural areas and especially in the villages of north West Bengal. Hence this research is an attempt to cover the villages of five major districts of north West Bengal. This study is specially focused on villages of 'Malda' district of north West Bengal.

3. Objectives Of The Study

The two major objectives of the study are as follows:

• To explore the various customer satisfaction measures related to villagers of 'Malda' district of north West Bengal.

• To extract the basic underlying customer satisfaction measures related to villagers of 'Malda' district of north West Bengal.

4. Methods And Materials

In the initial phase secondary data (research papers) had been explored to ascertain the various measures related to customer satisfaction for electronic payment system (variables or attributes). Finally twenty(20) fundamental factors were selected for the study. In the second phase, empirical data was collected from arbitrarily chosen 120 respondents (100 valid responses) who were the villagers of 'Malda' district of north West Bengal. The sampling technique was 'Convenience following with Snowball Sampling'. Data was collected through structured questionnaire (close ended questions) having likert's scale (Strongly Disagree – 1, Disagree – 2, Neutral – 3, Agree-4, Strongly Agree – 5). Demographic variables were ignored as the respondents did not want to disclose the same.Reliability analysis was not conducted scientifically but pilot testing was ensured among the 15 people and minor changes pertaining to variables were done for further processing.Respondents were contacted personally and through the known sources with a hard copy of questionnaire so as to minimize the possibility of non-response rate. Data thus obtained from 100 valid responses and on the twentyvariables was entered in a excel sheet by using an appropriate coding and ensured that no missing value was entered. Finally the 'Factor Analysis Technique' was applied as a part of multivariate analysis with the help of SPSS for compiling the results.

5. Data Analysis& Interpretation

The stepwise procedure had been adopted here as each analysis table was followed by its interpretation as required, leading to the attainment of objectives and results of the research.

1. **Total customer satisfaction statements (variables) explored:**

Table 1: Customer Satisfaction Statements		
S.No	Variable Name	Variable Details
1	CS1	I am fully satisfied with the electronic payment procedure.

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2	CS2	Electronic payments resolve credit and bad debt issue for my business.
3	CS3	Electronic payments save time.
4	CS4	Electronic payments are fully safe and secure.
5	CS5	I found electronic payments very useful in rush hours.
6	CS6	Electronic payments add value to my business.
7	CS7	It is very convenient to use electronic payment system
8	CS8	There is no need to handle large cash now.
9	CS9	No threat of loss or theft with electronic payment now.
10	CS10	I don't lose consumers to other merchants due to electronic payment systems.
11	CS11	I have full trust on electronic payment system.
12	CS12	I have full trust on electronic payment application provider.
13	CS13	I feel like day limit must be increased.
14	CS14	I feel that Government must increase awareness level regarding electronic payment system in my area.
15	CS15	I accept electronic payment to support cashless India.
16	CS16	I accept electronic payment to curb black money from India.
17	CS17	I want that everyone in my village use electronic payment system.
18	CS18	I have accepted electronic payment system after demonetization.
19	CS19	I will fully use electronic payment system.
20	CS20	I agreed that electronic payment system is a need of time.

Source: Author's own tabulation on the basis of Secondary data.

Interpretation: It is clear from Table1 that total twenty (20) variables related customer satisfaction of villagers of 'Malda' district of north West Bengal. This table had been significant in fulfilling the primary objective of this research.

2.   KMO and Barlett's Test:

Table 2: KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.733	
Bartlett's Test of Sphericity	Approx. Chi-Square	2049.008
	Df	210
	Sig.	.000

Source: SPSS output on the basis of Primary data.

Interpretation: The output of   SPSS as indicated in Table 2, value of KMO statistics is greater than 0.5 and p value is 0.000 which is less than 0.5. It showed that 'Factor Analysis' is an appropriate method for this data. Also the numbers of respondents were around 4-5 times the total number of variables identified.

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3. Extraction of Communalities:

Table 3: Communalities		
Variables	Initial	Extraction
CS1	1.000	.925
CS2	1.000	.823
CS3	1.000	.777
CS4	1.000	.827
CS5	1.000	.884
CS6	1.000	.804
CS7	1.000	.852
CS8	1.000	.777
CS9	1.000	.901
CS10	1.000	.752
CS11	1.000	.863
CS12	1.000	.967
CS13	1.000	.800
CS14	1.000	.873
CS15	1.000	.866
CS16	1.000	.954
CS17	1.000	.825
CS18	1.000	.827
CS19	1.000	.825
CS20	1.000	.735
Extraction Method: Principal Component Analysis.		

Source: SPSS output on the basis of Primary data.

Interpretation: It was evident from the above Table 3 that almost all the variables communality values were high, resulting that maximum of all the variable's variation had been explained by the extracted components.

4. Component Matrix:

Table 4: Component Matrix						
Variables	Component					
	1	2	3	4	5	6
CS1	-.324	.009	-.057	-.722	.102	-.534
CS2	.674	.554	-.001	-.079	.110	-.208
CS3	.601	.589	.197	.119	.119	-.033

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CS4	.705	.261	-.149	-.263	-.061	.408
CS5	-.605	.550	-.058	-.018	.447	.110
CS6	-.113	-.079	.837	.152	-.039	.244
CS7	-.695	.513	-.056	-.070	.302	.080
CS8	.766	.261	-.232	.157	.129	-.162
CS9	-.648	.545	-.027	-.042	.386	.182
CS10	.531	.644	.231	-.022	.003	-.046
CS11	.681	.201	-.139	-.323	-.137	.467
CS12	-.501	.685	-.174	.195	-.423	-.019
CS13	.646	.382	.484	-.014	-.030	.044
CS14	-.703	.543	-.023	-.097	.193	.189
CS15	.231	-.205	-.563	.670	-.033	.061
CS16	-.476	.681	-.182	.155	-.455	.005
CS17	.571	.536	.277	.211	.113	-.278
CS18	-.377	-.142	.507	.608	.156	-.116
CS19	-.482	.599	-.109	.174	-.411	-.152
CS20	.718	.344	-.269	.085	.094	-.114
Extraction Method: Principal Component Analysis.						
Total 6 components extracted.						

Source: SPSS output on the basis of Primary data.

Interpretation: The data in the above Table 4 presented the correlation coefficient between the variable and the corresponding component. These values were used to compute the Eigen values for each factor.

5. Total Variance Explained:

Table 5: Total Variance Explained									
Component	Initial Eigen values			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative e %
1	6.731	32.054	32.054	6.731	32.054	32.054	4.868	23.181	23.181
2	4.327	20.604	52.657	4.327	20.604	52.657	3.753	17.871	41.053
3	2.079	9.901	62.558	2.079	9.901	62.558	2.915	13.881	54.934
4	1.842	8.771	71.329	1.842	8.771	71.329	2.324	11.065	65.999
5	1.473	7.016	78.345	1.473	7.016	78.345	2.031	9.669	75.668
6	1.024	4.874	83.219	1.024	4.874	83.219	1.586	7.551	83.219

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7	.667	3.178	86.397						
8	.531	2.530	88.927						
9	.394	1.876	90.802						
10	.353	1.681	92.484						
11	.283	1.346	93.830						
12	.252	1.200	95.029						
13	.213	1.015	96.044						
14	.191	.908	96.952						
15	.166	.788	97.740						
16	.143	.682	98.422						
17	.117	.557	98.979						
18	.090	.428	99.408						
19	.080	.381	99.788						
20	.034	.160	99.949						
Extraction Method: Principal Component Analysis.									

Source: SPSS output on the basis of Primary data.

Interpretation: It was evident from Table 4 that total six components were available whose Eigen values were more than 1, hence total six factors were extracted and total variance explained by these factors was 83.219%.

6. Component Score Covariance Matrix:

Table 6: Component Score Covariance Matrix						
Component	1	2	3	4	5	6
1	1.000	.000	0.000	0.000	0.000	0.000
2	.000	1.000	.000	0.000	0.000	0.000
3	0.000	.000	1.000	0.000	0.000	0.000
4	0.000	0.000	0.000	1.000	.000	.000
5	0.000	0.000	0.000	.000	1.000	0.000
6	0.000	0.000	0.000	.000	0.000	1.000
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization. Component Scores.						

Source: SPSS output on the basis of Primary data.

Interpretation: The Table 9 indicated the covariance between the corresponding components as a diagonal matrix demonstrating absolute significance among the extracted components.

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6. Results And Discussions

The second objective of this research was to determine and to extract the underlying basic factors responsible for occupational stress among the respondents. Hence the 'Rotated Component Matrix' as a part of SPSS output had been obtained.

Table 7: Rotated Component Matrix						
Variables	Component					
	1	2	3	4	5	6
CS1	-.159	.157	-.008	-.024	-.024	**-.935***
CS2	**.850***	-.051	.002	.242	.149	-.127
CS3	**.860***	.035	.013	.136	-.023	.131
CS4	.442	-.128	-.129	**.758***	.022	.154
CS5	-.013	**.912***	.172	-.131	.041	-.062
CS6	.047	.021	-.147	-.302	**-.774***	.298
CS7	-.119	**.852***	.280	-.129	-.019	-.126
CS8	.685	-.247	-.116	.205	.428	.091
CS9	-.067	**.918***	.207	-.091	-.036	-.035
CS10	**.824***	.043	.117	.201	-.132	.013
CS11	.356	-.169	-.119	**.819***	-.043	.150
CS12	.020	.368	**.909***	-.045	.006	.046
CS13	**.772***	-.162	-.097	.161	-.360	.115
CS14	-.145	**.841***	.352	-.039	-.117	-.071
CS15	-.066	-.279	.061	-.071	.686	.552
CS16	.015	.345	**.913***	.009	-.010	.037
CS17	**.898***	-.062	.032	-.107	-.004	.041
CS18	-.074	.109	-.034	-.793	-.245	.345
CS19	.027	.281	**.850***	-.144	-.011	-.048
CS20	.670	-.176	-.043	.290	.409	.059
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.						
Rotation converged in 25 iterations.						

Source: SPSS output on the basis of Primary data.

Interpretation: The cutoff point was taken as 0.75 and finally 16 variables* were extracted in all as indicated in Table 6. All the variables which were appearing under one component had not been repeated in the subsequent component.

As a final outcome, the six major underlying factors are as follows:

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- **FACTOR 1** comprises of 'Resolving Bad Debts & Credit Issue', 'Saves Time','Not Loosing Customers to other Merchants', 'Day Limit to be Increased' and 'Everyone to Use Electronic Payment System'.

- **FACTOR 2** comprises of 'Useful in Rush Hours', 'Convenient to Use', 'No Threat of Loss or Theft' and 'Awareness level to be Increased'.

- **FACTOR 3** comprises of 'Full Trust on Electronic Payment Service Provider', 'Electronic Payment Curb Black Money' and 'Completely use Electronic Payment'.

- **FACTOR 4** comprises of 'Fully Safe & Secure' and 'Full Trust on Electronic Payment System'.

- **FACTOR 5** is 'Add Value to the Business'

- **FACTOR 6** is 'fully satisfied with Electronic Payment Procedure'

Surprisingly, the variable under factor 5 and factor 6 was indicating a negative sign though the score was greater than 0.75, which rather derived as some misunderstanding in the concerned statement.

7. Conclusion

The present study precisely and prudently stated that whosoever villagers using the electronic payment systems are completely satisfied with the same.The researcher through the study of secondary data has explored total twenty variables related to the customer satisfaction for electronic payments. Mainly the villagers are satisfiedfrom the point of view of business utility of electronic payment system.Findings have revealed some fundamental factors of customer satisfaction like'Resolving Bad Debt & Credit Issues', 'Saves Time' , 'Customer Retention' , 'Convenient to Use' , 'No threat of Loss or Theft ' and 'Full Trust on Electronic Payment System and on Application Provider'. Eventually it has been suggested that for the betterment of electronic payment systems and for the better penetration level, the Government of India must increase the awareness level of the same and work towards the better internet connectivity and baking facilities in rural areas of Malda district of north West Bengal.

7. Limitations And Scope For Future Research

Primary limitation of this research is use of convenience sampling for collecting primary data. Secondly, the respondents are bit reluctant to provide the responses regarding electronic payments, hence the questions related to the demographic profile have been ignored. Lastly, the time frame to conduct this study has been highly limited. Furthermore, there is an immense scope for future research in this domain as electronic payments penetration is increasing day by day in rural India.

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