A Case – Study on the On-Line Survey and the On-Line Tools for the Policy, Theory and Practice Implications

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Abstract: This research work had been designed and put forth in a such a way that a good frame-work could be developed for the on-line research tools and the research works. This research work gives more importance to the on-line survey tools and the on-line calculators for the research works. And using this research work an attempt was tried to be made towards the policy implications, practice implications and the theory implications with this kinds of the research.

Keywords: Policy, Practice, Theory, On-Line Calculators, On-Line Surveys

1. Introduction

1.1. Background of the Research

This work was carried out for the purpose of assigning the clear and concise guidelines / procedures for the on-line surveys and the on-line analysis for promising something much more a better methodology for the research world when compared with the any other methodology of the research activity (Conventional Methodologies Discussed).

There are various types of the surveys namely electronic surveys, e-mail based surveys, mixed-mode surveys, web-based surveys and point-of-contact surveys.

1.2. Research Problem and Hypothesis

For the kind of the research which considered the e-prosurveys.com there were no needs for the various design issues that were to be addressed. When compared with the previous conventional ones, this research completely overcame the Time and the Cost constraints.

Any research to start, moves with the problem definition and after the problem is defined moves on to the null hypothesis and alternate hypothesis.

The null Hypothesis means that there is no significant difference or the relationship between the two/more of the parameters. The Null Hypothesis is like a double-edged knife and acts like a puzzled statement about the reasons for the negative statements which are supposed to be rejected.

When referred with the statistics there could be four kinds of decisions that could be taken by the researcher when analyzing the statements of the research.

Table 1. Research level decisions.

<table>
<thead>
<tr>
<th>Correct Decision</th>
<th>Correct Decision</th>
<th>Incorrect Decision</th>
<th>Incorrect Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>To reject the Null Hypothesis when it is FALSE</td>
<td>To reject the Null hypothesis when it is TRUE</td>
<td>To reject the Null Hypothesis when it is FALSE</td>
<td>To reject the Null hypothesis when it is TRUE</td>
</tr>
<tr>
<td>Method A (is not equal to) Method B</td>
<td>Method A (is equal to) Method B</td>
<td>Method A (is equal to) Method B</td>
<td>Method A (is not equal to) Method B</td>
</tr>
<tr>
<td>Type I &amp; Type II errors are inversely related to each other</td>
<td>Type I Error</td>
<td>Type II Error</td>
<td>Type I Error</td>
</tr>
</tbody>
</table>

1.3. Justification for the Research

This research mainly focused on the understanding and then measuring the customers’ expectations with the customer’s perceptions about the Service Quality and results in ascertaining the gaps between the customer-expectations and the customer-perceptions.

The obvious next stage was to identify the gaps and the ultimately to find the reasons for the gaps, and finally to
provide the suggestions for bridging the gaps by suggesting a follow-up methodology.

The last step was to generalize the complex findings into the simpler forms by introducing the tabular forms and the figurative explanations for the easy understanding of the readers.

1.4. Methodology

This research essential consisted of the steps and the procedures that were mentioned and promoted by the software e-prosurveys.com. This software allows the user to create the surveys, collect the responses, Analyze the results and then to safely secure the Data on the Web itself.

1.5. Important Definitions

E-surveyspro.com –This is professional on-line survey software for the professional s which allows launching the survey online and also to collect the data and analyze the data automatically.

1.6. Delimitations of the Scope and the Key Assumptions

The survey was launched anonymously considering the positional respondents to be aware of the usage features of the computers and the instrument of the research.

The data was collected through the on-line tools of the software which were found to be both reliable and valid for the further course of the research work. Thus the analysis provided or the results showcased by the software were also accepted. The on-line calculators were used further to simplify and speed up the task of the research further to know the more accurate and the precise results. For the purpose of the generalizations of the data analysis and the results, the research findings were converted into more of the tabular forms and figurative ones.

2. Related Work / Literature Review

2.1. Introduction

In order to understand the research of this kind the following research papers were cited as mentioned in the references, with the complete breadth of the knowledge and the depth of the concepts involved for the on-line surveys.

2.2. Parent Disciplines and the Classification of the Models

This research mainly focused on the almost all the concurrent aspects of the Engineering and Management concepts and the philosophies with the aim at the SIX SIGMA for the SERVICE QUALITY.

2.3. Immediate Disciplines, Actual Models

Some of the basic concepts of the Industrial Engineering, Mechanical engineering, Computer Science, Information technology and Construction Management principles were touched as an over-view for the various kinds of the assistance required for these kinds of the research.

2.4. Research Questions and Research Hypothesis

The following were the research questions that were launched for finding out the Customer Expectations and Customer Perceptions:

<table>
<thead>
<tr>
<th>S/No.</th>
<th>Research Questions</th>
<th>Attribute</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1</td>
<td>Excellent Organisation(s) will have modern looking equipment.</td>
<td>T</td>
</tr>
<tr>
<td>Q2</td>
<td>The physical facilities at excellent Organisation(s) will be visually appealing.</td>
<td>A</td>
</tr>
<tr>
<td>Q3</td>
<td>Employees at excellent Organisation(s) will be neat in their appearance.</td>
<td></td>
</tr>
<tr>
<td>Q4</td>
<td>Materials associated with the service (pamphlets or statements) will be visually appealing at an excellent Organisation(s).</td>
<td>N</td>
</tr>
<tr>
<td>Q5</td>
<td>When a customer has a problem, excellent Organisation(s) will show a sincere interest in solving it.</td>
<td></td>
</tr>
<tr>
<td>Q6</td>
<td>When a customer has a problem, excellent Organisation(s) will show a sincere interest in solving it.</td>
<td>R</td>
</tr>
<tr>
<td>Q7</td>
<td>Excellent Organisation(s) will perform the service right the first time.</td>
<td>E</td>
</tr>
<tr>
<td>Q8</td>
<td>Excellent Organisation(s) will provide the service at the time they promise to do so.</td>
<td>L</td>
</tr>
<tr>
<td>Q9</td>
<td>Excellent Organisation(s) will insist on error free records.</td>
<td>R</td>
</tr>
<tr>
<td>Q10</td>
<td>Employees of excellent Organisation(s) will tell customers exactly when services will be performed.</td>
<td>E</td>
</tr>
<tr>
<td>Q11</td>
<td>Employees of excellent Organisation(s) will give prompt service to customers.</td>
<td>E</td>
</tr>
<tr>
<td>Q12</td>
<td>Employees of excellent Organisation(s) will alwaysbe willing to help customers.</td>
<td>S</td>
</tr>
<tr>
<td>Q13</td>
<td>Employees of excellent Organisation(s) will never be too busy to respond to customers' requests.</td>
<td>P</td>
</tr>
<tr>
<td>Q14</td>
<td>Organisation(s) will insist confidence in customers.</td>
<td></td>
</tr>
<tr>
<td>Q15</td>
<td>Customers of excellent Organisation(s) will feel safe in transactions.</td>
<td>A</td>
</tr>
<tr>
<td>Q16</td>
<td>Employees of excellent Organisation(s) will be consistently courteous with customers.</td>
<td>S</td>
</tr>
<tr>
<td>Q17</td>
<td>Employees of excellent Organisation(s) will have the knowledge to answer customers' questions.</td>
<td>S</td>
</tr>
<tr>
<td>Q18</td>
<td>Excellent Organisation(s) will give customers individual attention.</td>
<td></td>
</tr>
<tr>
<td>Q19</td>
<td>Excellent Organisation(s) will have employees who give customers personal service.</td>
<td>E</td>
</tr>
<tr>
<td>Q20</td>
<td>Excellent Organisation(s) will have operating hours convenient to all their customers.</td>
<td>M</td>
</tr>
<tr>
<td>Q21</td>
<td>Excellent Organisation(s) will have their customers' best interest at heart.</td>
<td></td>
</tr>
<tr>
<td>Q22</td>
<td>The employees of excellent Organisation(s) will understand the specific needs of their customers.</td>
<td>P</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sl No.</th>
<th>Research Questions</th>
<th>Attribute</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1</td>
<td>The Organisation(s) have modern looking equipment.</td>
<td>T</td>
</tr>
<tr>
<td>Q2</td>
<td>The Organisation(s) physical features are visually appealing.</td>
<td>A</td>
</tr>
<tr>
<td>Q3</td>
<td>The Organisation(s) reception desk employees are neat appearing.</td>
<td></td>
</tr>
<tr>
<td>Q4</td>
<td>Materials associated with the service (such as pamphlets or statements) are visually appealing at</td>
<td>N</td>
</tr>
</tbody>
</table>
2.5. Conclusions

The literature review was made from the various journals that are as mentioned in the references and apart from the same, the parent disciplines and the immediate disciplines were also traced-out then the focus was made towards the research methodology.

3. Research Methodology

3.1. Introduction

The research methodology that was involved was to prepare an on-line questionnaire considering the following for framing the questionnaires which is based upon the Central Limit Theorem:

If large number of the equal sized samples (greater than 30) are selected at random from an infinite population, then the means of the samples would be normally distributed; the mean value of the sample would be the same as the mean value of the population; as the size of the sample increases, the standard error of the mean decreases; the sample size and the sampling error are negatively correlated; and thus this may be generalized that as the number of the independent observations increase—the error involved in generalizing from the sample values to the population values decrease and the accuracy of the population increases.

3.2. Justification for the Methodology

As cited in the text-book “Education Research” by John W. Best & James V. Kahin, Statistics is the servant and not the master of the logic, it is a means rather than an end of the research. Unless the basic assumptions are valid, unless the right data are carefully gathered, recorded and tabulated and unless the analysis and the interpretations are logical, statisticians could make no contribution to the search for the truth.

Any of the statistics process as a servant of the logic should verify, clarify and measure the relationships that have been established by the clear and the logical analysis.

The statistics is a means of the research but never an end of the research. A statistical process is never employed in the analysis of the data unless and until there is a meaning to the data that is analyzed. The statistics prove that the analyzed data is no more accurate and valid than the original data itself.

Before the treatment of any statistical data, the data collected through the research. A statistical process is never employed in the analysis of the data unless and until there is a meaning to the data that is analyzed. The statistics prove that the analyzed data is no more accurate and valid than the original data itself.

3.3. Research Procedures

There are four good ways to invite the anonymous respondents to give their responses.

<table>
<thead>
<tr>
<th>Sl No.</th>
<th>Research Questions</th>
<th>Attribute</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q5</td>
<td>When the Organisation(s) promises to do something by a certain time, it does so.</td>
<td>R</td>
</tr>
<tr>
<td>Q6</td>
<td>When you have a problem, the Organisation(s) shows a sincere interest in solving it.</td>
<td>E</td>
</tr>
<tr>
<td>Q7</td>
<td>The Organisation(s) performs the service right the first time.</td>
<td>R</td>
</tr>
<tr>
<td>Q8</td>
<td>The Organisation(s) provides its service at the time it promises to do so.</td>
<td>E</td>
</tr>
<tr>
<td>Q9</td>
<td>The Organisation(s) insists on error free records.</td>
<td>L</td>
</tr>
<tr>
<td>Q10</td>
<td>Employees in the Organisation(s) tell you exactly when the services will be performed.</td>
<td>R</td>
</tr>
<tr>
<td>Q11</td>
<td>Employees in the Organisation(s) give you prompt service.</td>
<td>E</td>
</tr>
<tr>
<td>Q12</td>
<td>Employees in the Organisation(s) are always willing to help you.</td>
<td>S</td>
</tr>
<tr>
<td>Q13</td>
<td>Employees in the Organisation(s) are never too busy to respond to your request.</td>
<td>P</td>
</tr>
<tr>
<td>Q14</td>
<td>The behaviour of employees in the Organisation(s) instils confidence in you.</td>
<td>S</td>
</tr>
<tr>
<td>Q15</td>
<td>You feel safe in your transactions with the Organisation(s).</td>
<td>A</td>
</tr>
<tr>
<td>Q16</td>
<td>Employees in the Organisation(s) are consistently courteous with you.</td>
<td>S</td>
</tr>
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<td>Employees in the Organisation(s) have the knowledge to answer your questions.</td>
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<tr>
<td>Q21</td>
<td>The Organisation(s) has your best interests at heart.</td>
<td>P</td>
</tr>
<tr>
<td>Q22</td>
<td>The employees of the Organisation(s) understand your specific needs.</td>
<td>P</td>
</tr>
</tbody>
</table>

3.4. Ethical Considerations

Intentionally using the inappropriate procedures and omitting out the relevant data considering as irrelevant might add to the unethical practice in the research. The errors in the measurements would always increase when the qualities and the characteristics of the human beings is involved, Hence a great scientist Piaget ones came to the conclusion that for the development of the human beings [Genetic Epistemology], projective tests, observations, open-ended questionnaires, opinionnaires and interviews are a must for the cases related to the non-quantitative studies. Power tests and Speed tests were also discussed.

4. Analysis of the Data

4.1. Introduction

The text book of education research clearly explains about
the validity and the reliability. The validity of the test scores relies exactly on all the available evidences relevant to the technical quality of the testing systems. This also includes the evidences of the careful test constructions adequate score scaling, equating and the standard setting with the careful attention for the fairness for all the examinees. (The Joint Committee on the standards for the Educational and Psychological Testing, 1999, p17).

Ultimately, the reliability or the stability of a test is usually expressed as a correlation coefficient with the major types as stability over time, stability over the item samples, stability of the items and the stability over the scorers. Some of the names of the INTELLIGENT TESTS include Stanford-Binet Intelligence Scale, Three Wechsler Scale (WPPSI-WECHSLER pre-school and the primary school of intelligence), Wechsler Intelligence scale for the children revised, WAIS – Wechsler Adult intelligence Scale, California test of Mental Maturity (Logical Reasoning, Spatial Relations, Numerical reasoning, Verbal Concepts and Memory), Aptitude Tests (Metropolitan Leading Readiness Test).

The interest’s inventories being an attempt to yield a measure of the types of the activities that an individual has a tendency to like and to choose. The self-Report instruments namely the Kuder-Preference Record and the Strong-Campbell interest inventory. The personality inventories include the Mooney problems checklist (1941) which is an inventory used by the students to report their own problems of adjustment. Subjects.

The subjects for the online survey were picked-up anonymously and the above mentioned methods were utilized for the purpose of obtaining the results.

4.2. Patterns of the Data Obtained for Each of the Research Questions or Hypothesis (Results Obtained from the Surveys)

There were three surveys that were carried out for this research work and the results of the same are hereby provided in short. All the research statements were carried out with the LIKERT Scales of 5-point and 7-point only.

Statements of “Strong Agreements” from the higher percentages to the lower percentages.

<table>
<thead>
<tr>
<th>Main survey</th>
<th>Count Q’s</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commitment test</td>
<td>s24</td>
</tr>
<tr>
<td>Infrastructure test</td>
<td>S35, S32</td>
</tr>
<tr>
<td>Focus and roll-out test</td>
<td>S37, S39, S44, S45, S46, S48, S38, S40, S43, S47</td>
</tr>
<tr>
<td>Measurement test</td>
<td>S52, S50, S54, S55, S56, S58, S60</td>
</tr>
<tr>
<td>Education test</td>
<td>S62, S64, S61, S63, S65, S66, S67, S68, S69, S70, S71, S72</td>
</tr>
<tr>
<td>Resources test</td>
<td>S77, S83, S74, S75, S78, S79, S80, S81, S82</td>
</tr>
<tr>
<td>Information and communication test</td>
<td>S85, S89, S86, S87, S88, S90, S91, S92, S93, S94, S96</td>
</tr>
<tr>
<td>Survey alignment test</td>
<td>S97, S103, S104, S107, S108, S99, S100, S101, S102, S105, S106</td>
</tr>
<tr>
<td>Alignment test</td>
<td>S114, S120, S110, S111, S112, S113, S117, S118, S121, S122, S123, S124, S125, S126, S127, S128, S129, S131</td>
</tr>
<tr>
<td>Supportive survey-ii</td>
<td>P8, p15, p16, p2, p4, p5, p9, p1, p3, p6, p14, p7, p17</td>
</tr>
</tbody>
</table>

N.B.: Out of a total of 272 statements, the success rate is 171(Strong Agreements) and the failure rate is 101

4.3. Conclusions

There is a clear justification of the methodology and the research procedure is now restricted only to the sender and the responder, thus considering almost all the ethical considerations for the same.

5. Conclusions and the Implications

5.1. Introduction

The whole of the research work was divided under the five heads with the Introduction considering the background of the research, research problem, research hypothesis, and justification for the research, methodology, definitions, Delimitations of the scope and the key assumptions of the research. The literature review included the study on the parent disciplines, immediate disciplines, analytical models, research questions and filtration of the research hypothesis. The methodology part included the justification of the methodology, research procedures and the ethical considerations for the research. The data analysis part included the subjects concerned, the patterns of the data for
5.2. Conclusion About Each of the Research Questions and the Hypothesis

The results that were provided by the software were very much at par with any other methods of the research of this kind.

Discriminative Value (DV) of the Items was found to be greater than 1.96 for both the Customer Expectations and the Customer Perceptions. (rule: Obtained >1.96).

Cronbach’s Alpha: Cronbach’s alpha for all the 44 Q’s was calculated as 0.998 which is an acceptable value for the reliability as the same is greater than 0.6. Cronbach’s alpha for the Expectations: (rule: Obtained >0.60); Tangibles: 0.945; Reliability: 0.935; Empathy: 0.908; Assurance: 0.941; Empathy: 0.966. Cronbach’s alpha for the Perceptions: (rule: Obtained >0.60); Tangibles: 0.887; Reliability: 0.894; Empathy: 0.840; Assurance: 0.780; Empathy: 0.951

Importance Analysis: Expectations: Highest 65 % and Lowest 35 %.

Sample Calculations:
- Gap Scores for the RATER: Tangibles -0; Reliability -4/5; Responsiveness -1/4; Assurance-1/4; Empathy -2/5, Servqual Scores =+1.7; Weighted Servqual Score =+1.7.
- The below mentioned gaps were removed (Pl refer 31-47 in the references section):
  - Gap: Competencies; Procedure for gap-Removal: Training and Development
  - Gap: Ergonomic Product Design and Development; Procedure for gap-Removal: Designing using the Software Tools
  - Gap: Teaching Deficiencies; Procedure for gap-Removal: Travel and Tourism
  - Gap: Redesigning of the Service Centers
  - Procedure for gap-Removal: Free and Open Source Softwares with the comparative studies on the modern and the traditional tools
  - Gap: Results; Procedure for gap-Removal: Brainstorming as a tool for the benchmarking
  - Gap: Action Research; Procedure for gap-Removal: Digitization
  - Gap: Analysis of the Service Quality; Procedure for gap-Removal: Using the Servqual and the
  - Gap: Entrepreneurship; Procedure for gap-Removal: Developing the new approaches
  - Gap: CRM; Procedure for gap-Removal: New Approach with the advanced tools
  - Gap: Redesigning of the maintenance –service-operations; Procedure for gap-Removal: Advanced Methodology
  - Gap: Alternative Approaches; Procedure for gap-Removal: Multi-Disciplinary Tools
  - Gap: Engineering / Technology Problems; Procedure for gap-Removal: New approach with the updated tools
  - Gap: Analysis; Procedure for gap-Removal: Comparative study with the traditional and the modern tools

5.3. Implications for the Theory

This paper quite permits for the framing of the theory as could be depicted from the above and the research papers do as well could provide for the theory.

5.4. Implications for the Policy and the Practice

This work could be very well recognized for the policy and the practices as well as the results of the data analysis are obtained in the most generalized fashion with the statistical results in terms of the percentages and the charts apart as well. This indicates the generalization of this kind of the research results.

5.5. Limitations

The research paper could not much focus on the service quality management processes namely Service Availability Management, Service Capacity Management, Service Performance Management, Service Continuity Management, Service Security Management, Service Event Management, Service Incident management and the Service Problem Management.

5.6. Further Research

Further research could be carried out on the application of the above mentioned approach for the Automobile Service Sector operable for the Rural Areas.

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