



A Research Methodology Connecting Meta-analysis and the Online Tools for the Budding Medicos: A Review

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Received: 15th May, 2023; Revised: 09th June, 2023; Accepted: 19th July, 2023; Available Online: 25th August, 2023

ABSTRACT

This effort is intended to investigate a research methodology that links meta-analysis with an online strategy for keyword generation and to expand the field of study for future researchers. A thorough investigation was conducted before collecting the data, employing meta-analysis, research synthesis, and integration into the available literature. The results from the research integration were then compared to the real results to see if they were comparable, and based on that comparison, the final results were recorded.

Keywords: Research Integration, Meta-analysis.

International Journal of Health Technology and Innovation (2023)

How to cite this article: Kiran RS. A Research Methodology Connecting Meta-analysis and the Online Tools for the Budding Medicos: A Review. International Journal of Health Technology and Innovation. 2023;2(2):7-15.

Doi: 10.60142/ijhti.v2i02.02

Source of support: Nil.

Conflict of interest: None

INTRODUCTION

The service quality is described by Parasuraman, Zeithaml, and Berry (1988) as the overall opinion or attitude relating to the superiority of the service and explained as entailing evaluations of the result. Service quality is the difference between what the consumer wants and what the customer actually receives from the service, or to put it another way, it is a balance between how the service is offered and what the client actually receives.

Six sigma can be understood and described as a metric, methodology, and philosophy. According to Gerald Barber et al. six sigma's defect-to-opportunity ratio of 3.4 enables organizations to deploy a measurement-based strategy focusing on process enhancement and reduction of variation. Six sigma as a methodology typically uses techniques like DMAIC and a clearly defined roadmap for problem solutions. Six sigma is a business philosophy that focuses on reducing variance in business processes based on data-driven decisions and customer-critical quality issues.

Traditional zero defects (ZD) was the sole criterion for benchmarking, but this has changed, and academics and researchers are moving away from the older ideas in favor of modern ones. Through this endeavor, an effort was made to use online methods and meta-analysis to close the gap between six sigma and service quality.

In order to generalize the theory, principles, policy, and practice implications that may lead to forecasts and possibly even the ultimate control of the events, software-oriented and user-defined research for exploratory(data) analysis has been done.

The investigation attempts to conduct a meta-analysis and an online approach to enhance the service quality to the six sigma level for an automobile service center.

In methodology, online questionnaires and the research integration of the earlier findings on similar works.

In conclusion, the implications were obtained with the aid of the online approaches and the meta-analysis.

In future works, the scope has been generated through the publications from this research work.

Objectives of the Work

In order to generalize the theory, principles, policy, and practice implications that may lead to forecasts and possibly even the ultimate control of the events, software-oriented and user-defined research for exploratory(data) analysis was done.

Scope of the Work

The study's conclusions and ramifications offer an understanding of how theory, concepts, policies, and practices might be generalized. The scope of the work is expanded further towards advanced research by the created results that were published.

Concise Report of the Work

This work was based upon the 5-chapter PhD theses pattern. This report is based upon the five chapter PhD thesis consisting of the following:

Section I Introduction- This provides an insight into the background of the research; research problems and the hypotheses- statements of the research problems; Justification for the research methodology Underlying assumptions & hypotheses considerations; Outline of the 5 chapter PhD theses pattern; Important definitions and the delimitations of the scope key assumptions.

Section II Literature Review- This provides an insight into the parent disciplines surveys using the questionnaire, survey classifications, immediate disciplines research design & statistical methods and also about the research questions for the research synthesis/integration.

Section III Methodology-This provides an insight into six sigma and the service quality; Justification for the paradigm & the methodology procedural steps for the survey and the ethical considerations.

Section IV Analysis- This provides an insight into the details of the subjects/respondents; Patterns of the data collection for each of the research questions separately for the main & the supportive surveys.

Section V Conclusions and the Implications- This provides an insight into the conclusions on the man survey & the three supportive surveys for the purpose of the generalization into the theory, principles, policy and practice implications.

Research Questions/Statements (Online Approach & Meta-Analysis)

Online Approach

A site or area where the outcomes of the research integration may be further examined and investigated in the form of models for data collecting, analysis, and interpretation for generalization, followed by standardization of the results, might be referred to as the “online approach.” Based on customer expectations and customer perceptions, 44 research questions were developed. 22 questions in total 22 for customer expectations and 22 for customer perceptions were asked. Regarding inquiries pertaining to customer expectations,

Meta Analysis/Research Integration/Research Synthesis

Meta-Analysis is a systematic and statistical summarization of the findings of previous and quantitative studies. Also known as the research synthesis and research integration. This also acts as the supplier of the information and as a describer of the phenomenon and the explainer of the phenomenon.

RQ1. Why six sigma for the service quality?

RQ2. What are the tools and techniques for the effective implementation of six sigma in the service organisation(S)?

RQ3. How to extend the service quality to the six sigma service quality?

RQ4. What are the research methodologies and techniques for extending the same?

RQ5. Are the results of the questionnaire based on the

manual collection of the data and the online collection of the data prove to be the same, or is the data collected online more superior than the manual data collection?

RQ6. How to extend the work to the automobile service center?

RQ7. What are the needs and the necessitates of a paperless automobile service center?

COVERING METHODOLOGY

Online Approach

The RATER attributes tangibles, reliability, responsiveness, assurance, and empathy were the foundation for the questionnaire, according to Parasuraman *et al.*

Primary Survey

The primary survey was launched in order to gather data, analyze that data, and create a report with the pertinent graphs and the websites listed below: <http://www.esurveyspro.com/SurveyResults.aspx?surveyId=205961> There were four direct methods to invite/instruct respondents to complete the survey.

- By sending the survey URL via your own
- e-mail program to the recipients of one’s own choice,
- By embedding a link to the survey URL in one’s own web page,
- By embedding the full survey page in one’s own web page
- By creating a recipient list and sending the survey invitations directly from the world wide web

The above mentioned were how the survey was launched and the data was collected and analyzed. Similarly, for the supportive surveys as well.

Meta-analysis Approach

- The development and design of the questionnaire.^{12,13,19} (The already created questionnaire was taken from the internet and which was based on the full examination of the current literature).
- The issues with the creation of the questionnaire.^{12,13,19}
- The questionnaire validation method that was chosen.^{3,19}
- Success stories involving the deployment of Servqual and six sigma independently.^{1,2,5,8-10}
- The reason(s) for the Six Sigma techniques’ implementation delay.^{10,20}
- The standards used to choose Six Sigma projects.^{10,20}
- The effectiveness and application of the Six Sigma and service quality tools and practises.¹⁰
- The critical success factors for the service industries and six sigma.¹⁰
- The six sigma critical-to-quality factors for the service sector.¹⁰
- The six sigma critical-to-cost factors for the service sector.¹⁰
- The benefits and drawbacks identified for both Indian and foreign industries.¹⁰
- The advantages of six sigma for service industries and six sigma industries.¹⁰
- The fundamental components of six sigma.¹⁰

- The distinctions between the manufacturing and service industries.¹¹
- The six sigma management factors.^{10,20}
- The six sigma application(s).^{7,9}
- The six sigma characteristic(s).⁷
- The difficulties facing both the six sigma and service industries.⁵
- The dmaic process's necessary tools and methods.¹
- The possible fields in which six sigma could be used.¹
- The justifications for using six sigma in service organizations.²
- The issues, results, and advantages of six sigma in service organizations.²
- The service quality gaps, number 23.⁴
- Six sigma contributes to quality.⁵

RESULTS AND DISCUSSIONS

The pertinent questions for the formulation of the strategy could be phrased as: Who? How? How Much? What? What amount?

Keep in mind the "MASTER." Using the acronyms M-Motivate (Mind), A-Acquire (Knowledge/Information), S-Search (Technology), T-Trigger (Mind Generate/Retrieve), E-Establish (Learner-Rapport), and R-Review, a learner's mental processes are stimulated. In a research project, "The choices are the hinges of the destiny."

Keep in mind that meta-analysis is for "META-DATA," not "HEARD" "A conclusive research is like a MEDICINE of knowledge," The HEARD acronym stands for honesty, explicitness, authenticity, respect, and directness. IV. Controlled research is any study that makes use of sufficient techniques to obviate the competing hypothesis. V. Process of Enquiry: A dynamic process that focuses on the formation of research questions and statements and seeks solutions through carefully monitored observations and studies. VI. The advantages of the online approach included mathematical (Precision & Accuracy), O-Objectivity,V-Verifiability,I- Impartiality,and E-Expertness.

CONCLUSIONS/CONTRIBUTIONS AND IMPLICATIONS

Online Approach

Main survey (15 kw plus 7 kw)

Customer Expectations: Modern looking equipment, appealing physical facilities, neatness of employees, appealing materials, problem solving, promises, error-free records, prompt services, customer assistance, employees' self-assured behavior, safe transactions, polite employees, individual attention, the customer's best interests, and the customer's particular needs.

Customer Perceptions: Problem-solving, time-bound services, appealing materials, appealing physical facilities, knowledgeable staff, and individualised care.

Supportive Survey: Focus should be placed on the [12 KW's] for the CRM (based upon SA's Needs), current information,

complaints-resolution, customer satisfaction measurement, support for the customer experience, cooperation and teamwork, company values and company objectives, workplace, customer satisfaction, and customer relationships customers both new and old, visits from customers, service-excellence.

Supportive Survey: The results summarization calls to focus on the below mentioned for the TQM (based upon SA's)

Planning Initiative: [08 kw's] Data review, process review, business issues, short-term goals, long-term objectives, plan implementation accountability, implementation measures, review process and stakeholders' feedback. Leadership & Commitment-[02 kw's] voice and KPI's. Infrastructure [02KW's] Team Implementation and individuals trg

Focus & Roll Out: [07 kw's] Short-term goals, long-term roll outs,customer-supplier involvement, employees empowerment, accountable personalities and critically lined objectives Measurement (Testing & Reporting Systems) [06KW's] Strategies, customer satisfaction, process improvement, organization improvement, decision-based data and world class benchmarking.

Education: [10KW's] Employee knowledge & skills audit trg, audit trg strategies, need-based TRG, effective curriculum, sources identification, work-based TRG, facilitation-based TRG, world-class trg and benchmarking

Resources: [08KW's] Needs, facilities &eqpt, time-based needs, customer needs, expertise-based ongoing TRG, quality incorporated annual planning & budgeting, supplier's commitment and management inputs.

Information & Communication: [08 kw's] Integrated information, comm tools audit, process ownership, comm. strategy, comm.integrations, comm.benchmarking, systematic periodic updates and customer suppliers.

Systems Alignment: [07 kw's] Strategy, appraisals& promotions, ethics, health & safety, marketing & comm., TRG org. processes, employee needs, job descriptions and customer satisfaction.

Customer Alignment:[08 kw's] Strategy, expectations, satisfaction measures, partner relationships, new products & services, continuous feedback, customer future needs and benchmarking.

Supplier Alignment: [07 kw's] Key supplier identification strategy, satisfaction measures, vendor certifications, measures, future supplier reqts.,supplier TRG. and supplier feedback.

Public Responsibility (Linkages): [09 kw's] Quality ethics, quality & improvement, quality & environment, quality with safety, marketing & comm., visits, speeches & discussions, health & safety, locations & dept. and public responsibility efforts.

Supportive Survey

up to date eqpt.physical facilities,welldress&neatness,physical facilities & services, promises, sympathy, dependance, time boundness,record keeping, customer-employee trust,safe transactions, politeness and adequate support.

Meta-analysis Approach

Concise report of the work

This work was based upon the 5-chapter PhD theses pattern. This report is based upon the five chapter PhD thesis consisting of the following:

Section I Introduction: This provides an insight into background of the research; research problems and the hypotheses statements of the research problems; Justification for the research methodology Underlying assumptions & hypotheses considerations; Outline of the 5-chapter PhD theses pattern; Important definitions and the delimitations of the scope key assumptions.

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Section V Conclusions and the Implications: This provides an insight into the conclusions on the main survey & the three supportive surveys for the purpose of the generalization into the theory, principles, policy and practice implications.

RESEARCH QUESTIONS/STATEMENTS (ONLINE APPROACH & META-ANALYSIS)

Online Approach

Online approach could be defined as the location/area where the results of the research integration could be further analysed and studied in the form of the models for the collection analysis and interpretation for the generalization and then the standardization of the findings. There were 44 research questions that were framed based upon customer expectations and the customer perceptions. The first 22 questions for the customer expectations and the next 22 questions for the customer perceptions. For the questions related to the customer expectations, (Q1-Q4) were from the tangibles, (Q5-Q9) were from the reliability, (Q10-Q13) were from the responsiveness, (Q14-Q17) were from the Assurance and (Q18-Q22) were from the empathy. For the questions related to the customer Perceptions (Q1-Q4) were from the Tangibles (Q5-Q9) were from the reliability, (Q10-Q13) were from the responsiveness, (Q14-Q17) were from the assurance and (Q18-Q22) were from the empathy. The research questions were based upon the likert scales (Absolutely Disagree, Strongly Disagree, Slightly Disagree, Neither Disagree nor Agree, Slightly Agree, Strongly agree & Absolutely Agree). Tangibles (Q1-Q4),

Reliability (Q5-Q9), responsiveness (Q10-Q13), assurance (Q14-Q17), and empathy (Q18-Q22) were the other four pillars of the survey. Q1-Q4 dealt with tangibles, Q5-Q9 dealt with reliability, Q10-Q13 dealt with responsiveness, Q14-Q17 dealt with assurance, and Q18-Q22 dealt with empathy in the questions pertaining to customer perceptions. The Likert Scales (Absolutely Disagree, Strongly Disagree, Slightly Disagree, Neither Disagree nor Agree, Slightly Agree, Strongly Agree & Absolutely Agree) were used to underpin the research questions.

Meta-Analysis/Research-Integration/Research-Synthesis

Meta-analysis is a systematic and statistical summarization of the findings of previous and quantitative studies. Also known as the research synthesis and research integration. This also acts as the supplier of the information and as a describer of the phenomenon and the explainer of the phenomenon.

- Why six sigma for the service quality?
- What are the tools and techniques for the effective implementation of the six sigma in the service organisation(s)?
- How to extend the service quality to the six sigma service quality?
- What are the research methodologies and techniques for extending the same?
- Are the results of the questionnaire based on the manual collection of the data and the online collection of the data prove to be the same, or is the data collected online more superior than the manual data collection ?
- How to extend the work to the automobile service center?
- What are the needs and the necessitates of a paperless automobile service center?

COVERING METHODOLOGY

Online Approach

The questionnaire was based upon the RATER attributes—tangibles, reliability, responsiveness, assurance, empathy (Parasuraman *et al*).

Main Survey

The main survey was launched for the data-collection, data-analysis and the report generation with the necessary graphs appropriately, with the web-links as mentioned below <http://www.esurveyspro.com/Survey Results.aspx?surveyId=205961> There were four direct ways to instruct/invite the people to complete the survey

- By sending the survey URL via an own
- e-mail program to the recipients of one's own choice,
- By embedding a link to the survey URL in one's own web page,
- By embedding the full survey page in one's own web page
- By creating a recipient list and sending the survey invitations directly from the world wide web

The above mentioned were the ways in which the survey were launched and the data was collected and analysed. Similarly for the supportive surveys as well.

Meta-analysis Approach

- The questionnaire design and the development.^{12,13,19}
- (The already drafted questionnaire was downloaded from the internet and which was based on the comprehensive review of the existing literature).
- The problems associated with the questionnaire development.^{12,13,19}
- The validation of the questionnaire selected.^{3,19}
- The success stories of the application of the six sigma and the servqual separately.^{1,2,5,8-10}
- The reason(S) for the delay in the implementation of the six sigma strategies.^{10,20}
- The criteria for selecting the six sigma projects.^{10,20}
- The usefulness and the applicability of the tools and techniques for six sigma and the service quality.¹⁰
- The critical-success-factors for the six sigma and the service industries.¹⁰
- The critical-to-quality-factors for the six sigma and the service industries.¹⁰
- The critical-to-cost-factors for the six sigma and the service industries.¹⁰
- The advantages and the disadvantages found for indian industries and industries abroad.¹⁰
- The benefits of the six sigma for the six sigma industries and the service industries.¹⁰
- The basic elements of six sigma.¹⁰
- The differences between the service industries and the manufacturing industries.¹¹
- The factors for six sigma management.^{10,20}
- The application(S) of the six sigma.^{7,9}
- The characteristic(S) of the six sigma.⁷
- The challenges for the service industries as well as for the six sigma industries.⁵
- The tools and techniques required for the dmaic process.¹
- The potential area where six sigma could be employed.¹
- The reasons for the six sigma into the service organisations.²
- The problems, outcomes and benefits of the six sigma in service organizations.²
- The service quality gaps.⁴
- The contributions of six sigma to quality.⁵

RESULTS AND DISCUSSIONS

- For the strategy development the relevant questions could be framed with: Who? How? How Far? What? How Much?
- Remember the “MASTER” M-Motivate (Mind); A-Acquire (Knowledge/Information); S-Search (Technology); T-Trigger (Mind Generate/Retrieve); E-Establish (learner-Rapport); R-Review MASTER- THE CHOICES (in a research work) ARE THE HINGES OF THE DESTINY
- Meta-Analysis is for the “META-DATA”, Remember the “HEARD” H-Honest; E-Explicit; A-Authentic ; R-Respectful; D-Direct HEARD” A Conclusive Research is like a MEDICINE of KNOWLEDGE”
- Controlled Research- Any research that employs adequate procedures to rule out the competing hypothesis.

- Process of Enquiry-A dynamic process focussing on the formulation of the Research Questions /Statements seeking the Answers / Solutions through the Controlled Observations and Studies.
- The benefits associated with the Online approach were M-Mathematical (Precision & Accuracy); O-Objectivity; V-Verifiability; I-Impartiality;E- Expertness.

Conclusions/Contributions and Implications

Online approach

MAIN SURVEY [15 KW's + 07 KW's]

CUSTOMER EXPECTATIONS- Modern looking equipment, appealing physical facilities, employees neatness, appealing materials, problem solving, promises, error free records, prompt services, customer's help, employees confident behavior, safe transactions, courteous employees, individual attention, customer's best interest and customer's specific needs.

Customer perceptions

Modern looking eqpts, appealing physical facilities, appealing materials, problem solving, time bound services, employees knowledge and personal attention.

Supportive survey

The results summarization calls to focus on the [12 KW's] for the CRM (based upon SA's) needs, updated information, complaints-resolution, customer-satisfaction trg., Customer-experience support, teamwork & fellowship,company-values & company-goals, working-environment, customer-delight trg., Customers-relationship, new-customers & old-customers, customers-visits, service-excellence,

Supportive survey

The results summarization calls to focus on the below mentioned for the TQM (based upon SA's) Planning Initiative-[08 kw's] Data-review, process-review, business issues, short-term goals, long-term objectives, plan implementation accountability, implementation measures, review process and stakeholders feedback. Leadership & Commitment-[02 kw's] voice and KPI's. Infrastructure-[02 kw's] team-implementation and individuals trg focus & Roll Out-[07 kw's] short-term goals, long-term roll-outs,customer-supplier involvement, employees empowerment, accountable personalities and critically lined objectives measurement (Testing & Reporting Systems)-[06 kw's] strategies, customer satisfaction,process improvement, organisation improvement decision-based data and world class benchmarking Education-[10KW's] Employee knowledge & skills audit trg, audit trg strategies need-based trg,effective curriculum sources identification, work-based trg, facilitation-based trg,world-class trg and benchmarking Resources-[08 kw's] Needs, facilities &eqpt, time-based needs, customer needs, expertise-based ongoing trg, quality incorporated annual planning & budgeting, supplier's commitment and management inputs.Information & communication-[08 kw's] Integrated information, comm tools audit, process ownership, comm. strategy, comm.integrations,

comm.benchmarking, systematic periodic updates and customer suppliers. Systems alignment-[07 kw's] Strategy, apraials& promotions, ethics, health & safety, marketing comm., trg -org. processes, employee needs, job-descriptions and customer satisfactions.Customer Alignment –[08 kw's] Strategy, expectations, satisfaction measures, partner-relationships, new products & services, continuous feedback, customer future needs and benchmarking.Supplier Alignment-[07 kw's] Key supplier identification strategy, satisfaction measures, vendor certifications, measures, supplier future reqts.,supplier TRG. and supplier feedback. Public responsibility (Linkages)-[09 kw's] Quality ethics, quality & improvement, quality & environment, quality with safety, marketing & comm., visits, speeches & discussions, health & safety, locations & dept. and public responsibility efforts.

Supportive survey

The results summarization calls to focus on [15 kw's] for the Customer Expectations of the service centers and [10 kw's] for the customer perceptions of the service centers. Customer expectations – [17 kw's] up-to-date eqpt., physical facilities, well-dress & neatness, physical facilities & services, promises, sympathy, dependance, time-boundness,record keeping, customer-employee trust, safe transactions, politeness, adequate support, individual attention, personal attention, needs attention and convenient operating hours.Customer Perceptions 13 LW's] up-to-date eqpt., physical facilities, well-dress & neatness, physical facilities & services, promises, sympathy, dependance, time-boundness,record keeping, customer-employee trust, safe transactions, politeness and adequate support.

Meta-analysis Approach

RQ1. Why Six Sigma for the Service Quality ?

Resolution 1.1 The results of the 99% error free are found in-significant for the real world problems.

Resolution 1.2 The goals of the six sigma include the problems-discovery, errors-reduction, reworks-reduction, services-expansion, ultimate problem identification, qualitative-outputs, gaps-uncoverage and competitive-prices. Resolution 1.3 according to gerald barber *et al.*, reduction In-costs, process variation, cycle times, customer complaints, scrap rate, delivery time, checking, inspection and scrap rates. Increase in-overseas sales, new product development, employee-quality attitude, employee-problem solving, profitability and productivity [15 kw's]

RQ2.-What are the tools and techniques for the effective implementation of the six sigma in the service organisation(S)?

Resolution 2.1 According to dr. Lesley White et al, the tools and the techniques include the brain-storming, control charts, root cause analysis, affinity diagrams, run charts, pareto analysis, scatter plot, process capability analysis, histogram, quality function deployment and regression analysis. And the other include the matrix analysis, normal probability plot, process mapping, analysis of the variance, COPQ, DOE, SIPOC model and taguchi method. [18 kw's]

Resolution 2.2 The six sigma benefits include reduction in-customer complaints, process variations costs, scrap rate checking, inspection, delivery time and cycle time. Increase in productivity profitability company image employee attitudes problem solving attitudes, employee morales new product development, overseas sales and entry into the new markets [15 kw's]

Resolution 2.3 The critical success factors include the linkages to business strategy, customers, project management skills, suppliers and methodology. And the others include the culture change, project selection prioritization, training & education and project tracking & reviews. [09 kw's]

Resolution 2.4 The application challenges include customers satisfactions, customer needs, unpredictable volumes, unpredictable tasks, qualified informations, quality indicators, quality factors and quality programs.[08 kw's]

Resolution 2.5 The barriers include the lack of the knowledge, lack of the resources, lack of the education, poor project selections, cultural barriers, insufficient inter-departmental comm., leadership support, process parameters and commitments [09 kw's]

Resolution 2.6 The problem causers include high customers satisfactions, customer needs, unpredictable volumes, unpredictable tasks, qualified informations, quality indicators, quality factors and quality programs. [08 kw's]

Resolution 2.7 The problem solvers include on selecting the correct measures, understanding the performance processes, defining & ranking the defects, training & education, strong leadership, top mgt. Commitment, selection of the projects, project mgt. skills, alignment with the corporate business objectives and attaching the success to the financial benefits. [10 kw's]

RQ3. How to extend the service quality to the six sigma service quality?

Resolution 3.1 The extension could be very well carried out by conducting the online surveys based upon the Likert's scale as was carried out in this work. The main survey was carried-out with the ADAA (Absolutely Disagree-Absolutely Agree) and the supportive survey was carried-out with the SDSA (Strongly Disagree-Strongly Agree).

RQ4. What are the research methodologies and the techniques for extending the same?

Resolution 4.1 Output dictate Processes; processes dictate performance-variation; performance variation dictate six sigma opportunity.

Resolution 4.2 Six sigma is inversely proportional to the defects; The vertical consumer actions are directly proportional to the horizontal organizational actions.

Resolution 4.3 Customization is inversely proportional to the organisation; customization is directly proportional to the Consumers/Customers/Receivers.

RQ5. Are the results of the questionnaire based on the manual collection of the data and the online collection of the data prove to be the same or the data collected through the online is more superior than the manual data collection?

Resolution 5.1 Always the continuous processes out-perform the non-continuous processes.

Resolution 5.2 The processes with the feedback mechanism are more superior than the processes with the no-feedback mechanism.

RQ6.How to extend the work to the automobile service center?

Resolution 6.1 The essential strategies to be implemented include Improvement In-customer satisfaction, shareholder values, cost based results, tools, 99.999% perfections, productivity, profitability and different theories [08 kw's] Reduction in-variability, input, time, money, resources and variabilities [06 kw's].

Resolution 6.2 Implementation of the six sigma belt system namely, the white belt, yellow belt, green belt, black belt, master black belt, champion and executive leadership.

Resolution 6.3 The roles and the responsibilities are of the belts should be clearly defined with the accountability.

Resolution 6.4 Any of the six sigma designs could be adopted namely, Dmaic, Dmadv, Ddmaic, Ddmodv, Dmadov, Dmedi, Dccdi, Dmaidv.

Resolution 6.5 The voice of the customer could be compared with the historical research methods focus groups interviews councils records of the complaints testimonials customer records active customers, surveys observations warranty records lost & target customers and the call centers.

RQ7 What are the needs and the necessitates of a paperless Automobile Service Center?

Resolution 7.1 Both the qualitative and the quantitative analysis would be essential for a customer service center before the necessitates could be listed. Exploration of the gaps. (Motivation) preparation of the suitable questionnaire. (Acquire the tool); launching of the questionnaire. (Search for the solutions); responses collection (Result Summary). (Trigger the solutions); exploratory data analysis (Auto Generated).(Retrieve the results); retrieval generation of new knowledge additional information: knowledge generated from the Research papers.

(PL REFER TO:REFERENCES-II)

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Sl No: 02 Gap: Ergonomic product design and development procedure for gap-removal: Designing using the software tools

Sl No:03 Gap: Teaching Deficiencies Procedure for gap-Removal:Travel and

Tourism

Sl No: 04 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

Sl No: 05 Gap: Results: Procedure for gap-removal: brainstorming as a tool for the benchmarking

Sl No: 06 Gap: Action research procedure for gap-removal: Digitization

Sl No: 07 Gap: Analysis of the service quality procedure for gap-removal: Using the servqual and the importance analysis

Sl No: 08 Gap: Entrepreneurship procedure for the gap-removal: online tools

Sl No:09 Gap: CRMProcedure for gap-Removal: New Approach with the advanced tools

Sl No: 10 Gap: Redesigning of the maintenance –service-operations procedure for gap-removal: advanced methodology

Sl No: 11 Gap: Alternative approaches procedure for gap-removal: Multi-disciplinary tools

Sl No: 12 Gap: Engineering/technology problems procedure for gap-removal: New approach with the updated tools

Sl No: 13 Gap: Analysis procedure for gap-removal: comparative study with the traditional and the modern tools

Sl No: 14 Gap: Bonding of the six sigma with the service quality procedure for gap-removal: Literary study approach

Sl No:15 Gap: Management of the engineering projects procedure for gap-Removal: A review on the online approaches

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Annexure - Questionnaire Framed

Research Questions on Customer Expectations

- Q1 Excellent Organisation(s) will have modern looking equipment.
- Q2 The physical facilities at excellent Organisation(s) will be visually appealing.
- Q3 Employees at excellent Organisation(s) will be neat in their appearance.
- Q4 Materials associated with the service (pamphlets or statements) will be visually appealing at an excellent Organisation(s).
- Q5 When a customer has a problem, excellent Organisation(s) will show a sincere interest in solving it.
- Q6 When a customer has a problem, excellent Organisation(s) will show a sincere interest in solving it.
- Q7 Excellent Organisation(s) will perform the service right the first time.
- Q8 Excellent Organisation(s) will provide the service at the time they promise to do so.
- Q9 Excellent Organisation(s) will insist on error free records.
- Q10 Employees of excellent Organisation(s) will tell customers exactly when services will be performed.
- Q11 Employees of excellent Organisation(s) will give prompt service to customers
- Q12 Employees of excellent Organisation(s) will always be willing to help customers.
- Q13 Employees of excellent Organisation(s) will never be too busy to respond to customers' requests.
- Q14 The behaviour of employees in excellent Organisation(s) will instil confidence in customers.
- Q15 Customers of excellent Organisation(s) will feel safe in transactions.
- Q16 Employees of excellent Organisation(s) will be consistently courteous with customers.
- Q17 Employees of excellent Organisation(s) will have the knowledge to answer customers' questions.
- Q18 Excellent Organisation(s) will give customers individual attention.
- Q19 Excellent Organisation(s) will have employees who give customers personal service.
- Q20 Excellent Organisation(s) will have operating hours convenient to all their customers.
- Q21 Excellent Organisation(s) will have their customers 'best interest at heart.
- Q22 The employees of excellent Organisation(s) will understand the specific needs of their customers.

Research Questions on Customer Perceptions

- Q1 The Organisation(s) have modern looking equipment.
- Q2 The Organisation(s) physical features are visually appealing.
- Q3 The Organisation(s) reception desk employees are neat appearing.
- Q4 Materials associated with the service (such as pamphlets or statements) are visually appealing at the Organisation(s).
- Q5 When the Organisation(s) promises to do something by a certain time, it does so.
- Q6 When you have a problem, the Organisation(s) shows a sincere interest in solving it.
- Q7 The Organisation(s) performs the service right the first time.
- Q8 The Organisation(s) provides its service at the time it promises to do so.
- Q9 The Organisation(s) insists on error free records.
- Q10 Employees in the Organisation(s) tell you exactly when the services will be performed.
- Q11 Employees in the Organisation(s) give you prompt service.
- Q12 Employees in the Organisation(s) are always willing to help you.
- Q13 Employees in the Organisation(s) are never too busy to respond to your request.
- Q14 The behaviour of employees in the Organisation(s) instils confidence in you.
- Q15 You feel safe in your transactions with the Organisation(s).
- Q16 Employees in the Organisation(s) are consistently courteous with you.
- Q17 Employees in the Organisation(s) have the knowledge to answer your questions.
- Q18 The Organisation(s) gives you individual attention.
- Q19 The Organisation(s) has operating hours convenient to all its customers.
- Q20 The Organisation(s) has employees who give you personal attention.
- Q21 The Organisation(s) has your best interests at heart.
- Q22 The employees of the Organisation(s) understand your specific needs.