



# E-RESEARCH PROCEDURE FOR THE ENGINEERING DESIGN OPTIMIZATION APPROACH [A COMPUTER ORIENTED OPTIMIZATION APPROACH FOR STREAMLINING AND STANDARDIZING THE RESEARCH SCOPE OF THE WORKS] A REVIEW

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**ABSTRACT** - This paper had been written as a review for exploring the research results in the form of e-surveys and the merits and the demerits associated with the same for the budding researchers for the future research works.

This paper also provides some of the important reviews in the form of web-links of the research papers that had been published earlier which are directly and in-directly influencing to write a review paper of this kind for this kind of the valid and the reliable research.

**KEYWORD(s):** *Hypothesis, review, surveys, papered surveys, paperless surveys*

## I. INTRODUCTION

This paper pursues the pre-tested and the post-tested information for the more effective and efficient way towards the easy access for the subjects of the research work .This also instructs the research scholars about the Do's and the Do not's for the academic and the administrative research works .Further this enables the researchers with the tools and the techniques for the for the active and the authenticated solutions towards the exploration of the solutions / resolution / dissolutions for the Structured /Semi-Structured / Un-structured or more complex problems .The procedures are listed here that which could be followed for making the tasks and the activities simpler by furnishing an advanced insight into the subject of the research .This also fore-sights an approach towards the usage of the standardization of the diagrams ,letter symbols and signs which does prove be useful for the purpose of the installation diagrams on the websites for the speedier

Engineering Designs concerns ,consulting and ultimately the Research .

For the preparation and the presentation of the smaller sized diagrams / Drawings, a dedicated websites with the appropriate links pertaining to the Structured /Semi-Structured /Un-Structured problems with the appropriate links for the e-calculators could be designed for the standardized academic and the administrative support with the proper dimensioning and projection towards the solution / resolution / dissolution of the complex problems. A system with the toll-free number could be developed where in ones the problem in Structured / Semi-Structured / Un-Structured is addressed by the Customer, the appropriate links with the easy accessibility /affordability / availability /achievability could be traced out by the Support –Provider for the enquiry raised by the customer.

## II. LITERATURE REVIEW

The laypersons share the misconception that an adequate research must be miniature carbon copy or do have the identical characteristics of the designs engineered.

The Null Hypotheses and the Alternate Hypotheses is to accurately framed as provided an Analogy for the same –“Before the court of law, a defendant is assumed to be not guilty until the not-guilty assumption / allegation is discredited or rejected ”. Thus any design Consulting / Engineering could be done on the basis of the Qualitative Statistics.

In the language of the Genetic Epistemology , a scientist named Piaget , came to the conclusion that a non-quantitative search for the explanations would be fruitful in the study of the human development



.Further the projective tests ,observations ,open-ended questionnaire and opinionnaires & interviews could prove be resourceful in this connection .

The psychological tests yield the very objective and standardized descriptions of the behavior quantified by the numerical scores . The power tests have no time limit and and the subjects attempt progressively more difficult tasks and works within the scope until they are unable to continue with the same .The timed tests or the speed tests usually involve the element of the power but in addition they limit the time and the subjects have to complete the certain tasks and proves to be very good for the construction / administration / interpretation activities .

According to the Joint Committee on the standards for the Educational and Psychological testing ,1999,p17 : Ultimately the validity of any intended interpretation of the test score relies on all the available evidence relevant to the technical quality of the testing system .This includes the evidence of the careful test construction and adequate score scaling ,equating and standard setting ;and useful attention to fairness for all the examinees .

The reliability on the stability of a test is usually expressed as a correlation coefficient with the various commonly used types as stability over time (Test-Retest) , Stability over the item samples (equivalent or the parallel forms ),Stability of the items (internal consistency),Stability over the scores (Inter –Scorer) . [Split-Halves works if the test items are equally difficult through-out the test –Spearman Brown Formula , Inter-Scorer reliability could be determined by having two persons independently score the same set of test papers of test and then calculate the correlation between the scores].

### III. RESEARCH METHODOLOGY

Any research objectives could be classified as exploratory , descriptive ,diagnostic and hypotheses testing . And the types of the research include the many types with the different methodologies but the one that had been derived from the various works so far done in the fields of research had provided one and the same had been put-forth for the benefit of the future researchers as mentioned below in the form of the tables.And the journals from 47-64 and the text-book chapters 1-2 clearly provided the figures as mentioned below for the future researches.

1. <http://www.ijera.com/papers/vol%201%20issue%202/012246250AD.pdf>

2. <http://www.ijera.com/papers/Vol%201%20issue%204/BW01417741784.pdf>
3. [http://www.ripublication.com/ijepa/ijepav2n2\\_1\\_1.pdf](http://www.ripublication.com/ijepa/ijepav2n2_1_1.pdf)
4. <http://www.academia.edu/4607678/AD35166170>
5. <https://doaj.org/article/676014727a1c440589eff6c62ddd013>
6. <http://www.iaster.com/uploadfolder/6MethodologyofconductinganActionResearchinaDigitisedMannerCopy/6Methodology%20of%20conducting%20an%20Action%20Research%20in%20a%20Digitised%20Manner%20Copy.pdf>
7. <http://www.iaster.com/uploadfolder/02AnalysisofServiceQualityusingtheServqualMethodGM23Sept13Copy/02Analysis%20of%20Service%20Quality%20using%20the%20Servqual%20Method%20GM23Sept13%20Copy.pdf>
8. <http://www.iaster.com/uploadfolder/5Techno-EntrepreneurshipCopy/5Techno-Entrepreneurship%20Copy.pdf>
9. [http://www.ijera.com/papers/Vol3\\_issue6/AE36176187.pdf](http://www.ijera.com/papers/Vol3_issue6/AE36176187.pdf)
10. [http://rrjp.in/list\\_papers.php#](http://rrjp.in/list_papers.php#)
11. <http://www.academia.edu/5574790/LK3619561964>
12. <http://ijoer.in/Vol.2.Issue.4.html>
13. [http://www.academia.edu/8356385/How\\_to\\_Make\\_the\\_Financial\\_Analysis\\_an\\_Easy\\_Task\\_A\\_Comparative\\_Analysis\\_between\\_the\\_Traditional\\_and\\_the\\_Modern\\_Approach](http://www.academia.edu/8356385/How_to_Make_the_Financial_Analysis_an_Easy_Task_A_Comparative_Analysis_between_the_Traditional_and_the_Modern_Approach)
14. [http://www.researchgate.net/publication/273305715\\_A\\_literary\\_study\\_on\\_the\\_bonding\\_of\\_the\\_Six\\_Sigma\\_with\\_the\\_Service\\_Quality\\_for\\_the\\_enrichment\\_of\\_the\\_Service\\_Sector\(S\)\\_for\\_the\\_Construction\\_Projects\\_](http://www.researchgate.net/publication/273305715_A_literary_study_on_the_bonding_of_the_Six_Sigma_with_the_Service_Quality_for_the_enrichment_of_the_Service_Sector(S)_for_the_Construction_Projects_)
15. <http://jsaer.com/download/vol-1-iss-2-2014/JSAER0102009.pdf>
16. <http://gjar.org/publishpaper/vol2issue1/d58r82.pdf>
17. <http://gjar.org/publishpaper/vol2issue1/d57r45.pdf>
18. <http://gjar.org/publishpaper/vol2issue1/d78r66.pdf>
19. [https://globaljournals.org/GJRE\\_Volume15/4-A-Literature-Survey.pdf](https://globaljournals.org/GJRE_Volume15/4-A-Literature-Survey.pdf)
20. <http://www.indusedu.org/download.php?filename=aNnBD3Hjq9wU2Oy.pdf&new=2.pdf>
21. <http://article.sciencepublishinggroup.com/pdf/10.11648.j.ijedr.20150101.12.pdf>
22. <http://www.iiste.org/Journals/index.php/IEL/article/viewFile/19678/20174>

### IV. DATA COLLECTION(S)



The data collection could be done by either of the below mentioned two survey platforms which are equally good from all the aspects of obtaining the results along with the analysis obtained from the software itself for the purpose of the future research works or for the purpose of further statistical analysis namely using the SPSS / SAS / MINITAB .

#### V. SAMPLE CALCULATION(s)

The sample collections could be very easily found out and analyzed from the below mentioned web-

#### VII. REFERENCE(S)

##### A. TEXT-BOOKS (UN-CITED / CITED)

Sl No.	Name of the Text Book	Author
1	Research Methodology in the Management Theory and Case-Studies	P P Arya and Yash Pal
2	Statistical Methods for the Research workers	Sir Ronald Fisher
3	Total Quality Management	Prof. K Shridhar Bhatt
4	Design of the Experiments	Sir Ronald Fisher
5	Experimental Design	G.Cox & William Cochran
6	Design of Experiments	Genechi Taguchi
7	Design & Analysis of the Experiments	Dr. Douglas Montgomery
8	Management Research Methodology	K NKrishna Swamy , A I Siva Kumar , M Mathirajan
9	Statistics for the Experimenters	George Box ,William Hunter & Stuart Hunter
10	Total Quality Control	Dr.Armand V Feigenbaum
11	Quality Control : Principles ,Practices & Administration	Dr.Armand V Feigenbaum
12	Quality Control Handbook	Joseph Juran
13	Guide to Quality Control	Kaoru Ishikawa
14	Quality Enhancement –Role of the teachers and the students	N Siva Prasad
15	Research Methodology	C N Kothari
16	Quality is Free	Philip Crosby
17	Service Design for the Six Sigma ,A roadmap for Excellence	Basem El Haik and David M Roy.
18	Education Research	John W Best and James V Kahin
19	Characteristics of Good Teaching	A P Rayon

links which clearly indicate the procedures and the processes mentioned here with for further and future works of the research.

#### VI. RESULT(S)

The results of this review is that the papered surveys for the research works and equally comparable with the research works that are carried out with the paperless surveys.



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**B. WEBLINKS (UN-CITED)**

Sl No.	Weblink	Significance
1	<a href="http://gsociology.icaap.org/methods/">http://gsociology.icaap.org/methods/</a>	Program Evaluation and the Social Research Methods .
2	<a href="http://www.ssrn.com/ern/">http://www.ssrn.com/ern/</a>	Research Network
3	<a href="https://www.msu.edu/course/prr/844/methlk.htm">https://www.msu.edu/course/prr/844/methlk.htm</a>	Statistics Online
4	<a href="http://www.socialresearchmethods.net/kb/">http://www.socialresearchmethods.net/kb/</a>	Social Research Methods
5	<a href="http://www.geocities.ws/orgscience/">http://www.geocities.ws/orgscience/</a>	Research Methodologies
6	<a href="http://econ.worldbank.org/">http://econ.worldbank.org/</a>	Data and Research
7	<a href="http://home.ubalt.edu/ntsbarsh/Business-stat/OPRE/">http://home.ubalt.edu/ntsbarsh/Business-stat/OPRE/</a>	Graphs and Fortmulae
8	<a href="http://aom.org/journals/">http://aom.org/journals/</a>	Journals
9	<a href="http://www.ipl.org/IPLBrowse/GetSubject?vid=13&amp;tid=6687&amp;parent=0">http://www.ipl.org/IPLBrowse/GetSubject?vid=13&amp;tid=6687&amp;parent=0</a>	Journals
10	<a href="http://www.brint.com/notfound.html">http://www.brint.com/notfound.html</a>	Analyst Tools
11	<a href="http://3stages.org/glossary/others.html">http://3stages.org/glossary/others.html</a>	Statistical Glossary
12	<a href="http://www.decisionsciences.org/DecisionLine/col-doctoral.htm">http://www.decisionsciences.org/DecisionLine/col-doctoral.htm</a>	Doctoral student Issues
13	<a href="http://web.mit.edu/">http://web.mit.edu/</a>	Site
14	<a href="http://herbert.oulan.ou.edu/FredBeard/Secondary.html">http://herbert.oulan.ou.edu/FredBeard/Secondary.html</a>	Research Sources
15	<a href="http://www.nrf.ac.za/">http://www.nrf.ac.za/</a>	National Research Foundation
16	<a href="http://www.ism.ws/">http://www.ism.ws/</a>	
17	<a href="http://www.inventoryops.com/toc.htm">http://www.inventoryops.com/toc.htm</a>	Details about the software
18	<a href="http://www.nist.gov/index.html">http://www.nist.gov/index.html</a>	Misc Information
19	<a href="http://www.nngroup.com/articles/human-body-touch-input/">http://www.nngroup.com/articles/human-body-touch-input/</a>	
20	<a href="http://www.shrm.org/Pages/default.aspx">http://www.shrm.org/Pages/default.aspx</a>	
21	<a href="http://www.halogensoftware.com/landing/leading-solution/eSuccession.php">http://www.halogensoftware.com/landing/leading-solution/eSuccession.php</a>	Succession Planning Tool
22	<a href="http://www.repec.org/">http://www.repec.org/</a>	Research Papers in Economics