A systematic review of Research design and methods used to study the Impact of Competency Variables on the Performance of Highly Effective Employees in Indian Telecom Industry

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A systematic review of Research design and methods used to study the Impact of Competency Variables on the Performance of Highly Effective Employees in Indian Telecom Industry

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Abstract

The present study is conducted with the aim to provide an insight of research approach adopted to find out the relationship between competency variable leads to highly effective performance in Indian telecom sector. The study is of empirical in nature and the data has been collected with the help of self administered well structured questionnaire. The data has been collected from the 530 employees of the telecom sector and the response rate was around 70%. For the purpose of research, statistical tools such as correlation has been applied with the statistical package SPSS and analyzed with the help of regression.
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Introduction

This paper is an attempt to present a systematic review of the Research designs and methods used to study the Impact of Competency Variables on the Performance of Highly Effective Employees in Indian Telecom Industries.
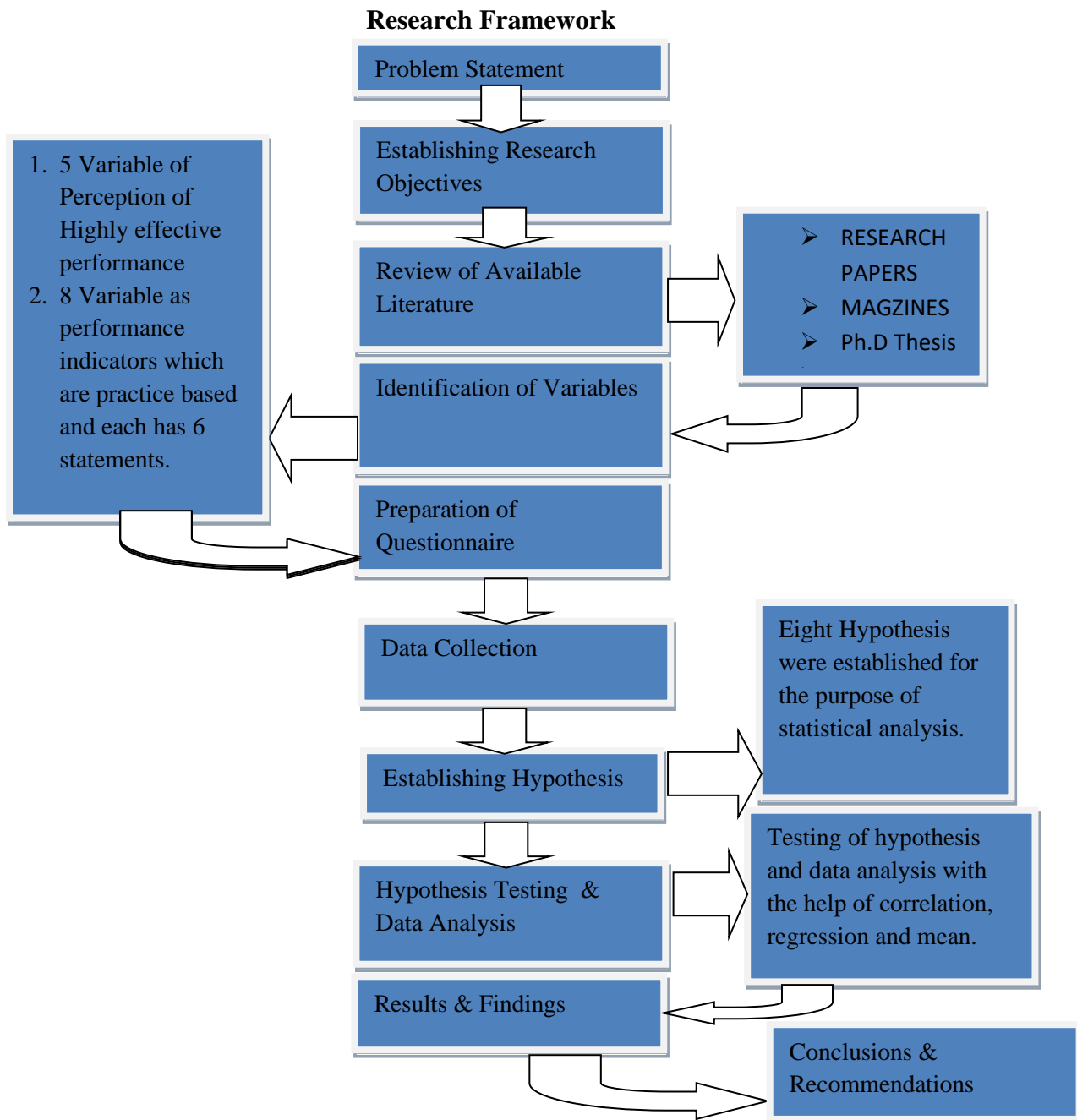It elaborates the research strategy, the empirical methods and the general approach, and specific techniques applied to address the objectives for the research. It also discusses the research design and the methods used in the selection of the variables to be studied, identification of research participants, and for data Collection process. Research methodology indicates the logic of development of the process used to generate theory that is procedural framework within which the research is conducted (Remenyi et al. 1998). It provides the principles for organizing, planning, designing, and conducting research. Methodological decisions are determined by the research paradigm that a researcher is following. The research paradigm not only guides the selection of data gathering and analysis methods but also the choice of competing methods of theorizing (Sayer 1992). This study is based on both primary and secondary data that are collected from various sources. Statistical data published by various relevant, concerned departments and authorities etc. Published books, and reports of various committees on the subject including those appointed by the government of India, Deliberations and proceedings of various workshops, conferences and seminars. Note on industry (for example, TRAI etc.).Elaborate articles from reputed business magazines and some other Working papers, and references available from Internet and some related websites to the subject. Here we have tried to discuss in brief, and clarify how evidence in this study was collected A well-structured questionnaire was developed keeping in view various behavioral indicators of each competencies and was used as primary tool of survey and data collection.

The study also introduces the research instruments utilized in the pursuit of achieve the research goals. The paper presents an overview of issues related to the procedures involved

A systematic review of Research design and methods used to study the Impact of Competency Variables on the Performance of Highly Effective Employees in Indian Telecom Industry

PJAEE, 18(1) (2021)

in the study which include research approaches, focus of research, data collection, research design, criteria for measurement, and conclusion.

Research Objectives:

1. To study and propose competency variables applicable to Indian Telecom Industry.
2. To measure results of different competency variables that has direct effect on the performance of highly effective employees.
3. To understand and apply the appropriate research method for the study.
4. To establish and authenticate the standards research process, tools and techniques to test the hypotheses

Research Framework

Problem Statement

Establishing Research Objectives

Review of Available Literature

- ➢ RESEARCH PAPERS
- ➢ MAGZINES
- ➢ Ph.D Thesis

1. 5 Variable of Perception of Highly effective performance
2. 8 Variable as performance indicators which are practice based and each has 6 statements.

Identification of Variables

Preparation of Questionnaire

Data Collection

Establishing Hypothesis

Eight Hypothesis were established for the purpose of statistical analysis.

Hypothesis Testing & Data Analysis

Testing of hypothesis and data analysis with the help of correlation, regression and mean.

Results & Findings

Conclusions & Recommendations

Literature Review

Research methodology is the important part of any research work. It determines the authenticity or the results, Crescentini & Mainardi,(2009) has suggested and given guidelines for quality research work, further Burns & Grove (2009) has opinion that in qualitative research daily life experience were highlighted and explained in systematic way. Rahi.S.(2017) theory becomes important in qualitative research. Lowhorn L.G (2007) qualitative and quantitative both research techniques are valid way. Valtakoski, A. (2019), in the past few years' variety of methods increased but methodology does not have direct effect though mixed methodology may positively affect impact of paper. Igwenagu C (2016,pp5) in his book describes research methodology as systematic technique, further talks about relationship between method and methodology. Methodology is a broader term outlines the way in which research project is to be performed apart from other things which method is to be used identifies it. Jonker and Pennink (2010) said that method is a group of steps or step of specific stets which normally moves between two destination of set points. Taherdoost H (2016) six steps sampling method such as defining target population, selecting frame, choosing sampling technique, determining sample size, collecting data and assessing response rate, apart from this the research talks about two sampling techniques probability and non probability sampling. Mohajan H (2018) highlighted the quality research method approaches and suggest that this method better explains and understands the phenomenal complexities. Mohajan H (2017) transparency of a research increases by reliability and validity. Preston CC, Colman AM (2000) the scale with few responses perform worst hence it can said that their validity responses were low hence scale with two, three, four should be avoided. Nunnally (1967), Cicchhetti et al(1985),Finn (1972), Symonds(1924), Ramsay(1973), Green & Rao(1970) and Oaster (1989) says that reliability score increases when we move from two point to six or seven point. Zhang J. et al (2016) application of statistical methods were increased in top five investigating journals, t-test, ANOVA and χ2-test were most frequently used statistical tests. Choy L.T.(2014) type of research weather qualitative or quantitative is immaterial.

Quantitative research is the numerical representation and manipulation of observations for the purpose of describing and explaining the phenomena that those observations reflect. It is used in a wide variety of natural and social sciences, including physics, biology, psychology, sociology and geology(Wikipedia Encyclopedia, 2005).In addition, according to Cohen (1980), quantitative research is defined as social research that employs empirical methods and empirical statements.. He states that an empirical statement is defined as a descriptive statement about what "is" the case in the "real world" rather than what "ought" to be the case. Typically, empirical statements are expressed in numerical terms, another factor in quantitative research is that empirical evaluations are applied. Empirical evaluations are defined as a form that seeks to determine the degree to which a specific program or policy empirically fulfills or does not fulfill a particular standard or norm. Moreover, Creswell (1994) has given a very concise definition of quantitative research as a type of research that is `explaining phenomena by collecting numerical data that are analyzed using mathematically based methods (in particular statistics).' The fact that the data have to be quantitative does not mean that they have to be naturally available in quantitative form. Non quantitative phenomena (such as teacher beliefs) can be turned into quantitative data through our measurement instruments. Quantitative research is often placed in opposition to qualitative research. This is often turned into a `paradigm war' which is seen to result from apparently incompatible worldviews underlying the methods.

When you look closely at researchers' actual beliefs, it appears that the so-called subjectivist (qualitative) versus realist (quantitative) divide is not that clear-cut. Many researchers take a pragmatic approach to research and use quantitative methods when they are looking for breadth and they want to test a hypothesis or want to study something quantitative. If they are looking for depth and meaning, they will prefer to use qualitative methods. In many cases, mixed methods approaches will be appropriate. No research method qualitative or quantitative method is perfect.

Process adopted to arrive at the final eight competency variables for the study

Various organizations have designed their own competency framework to drive performance by building employee capability through various interventions. Since, the study in reference is Telecom industry. The competency framework of Idea Cellular (a part of Aditya Birla Group), Airtel, Vodafone, Tata Tele services (Tata Group), Aircel and Reliance Info com, and Reliance Jio were studied.
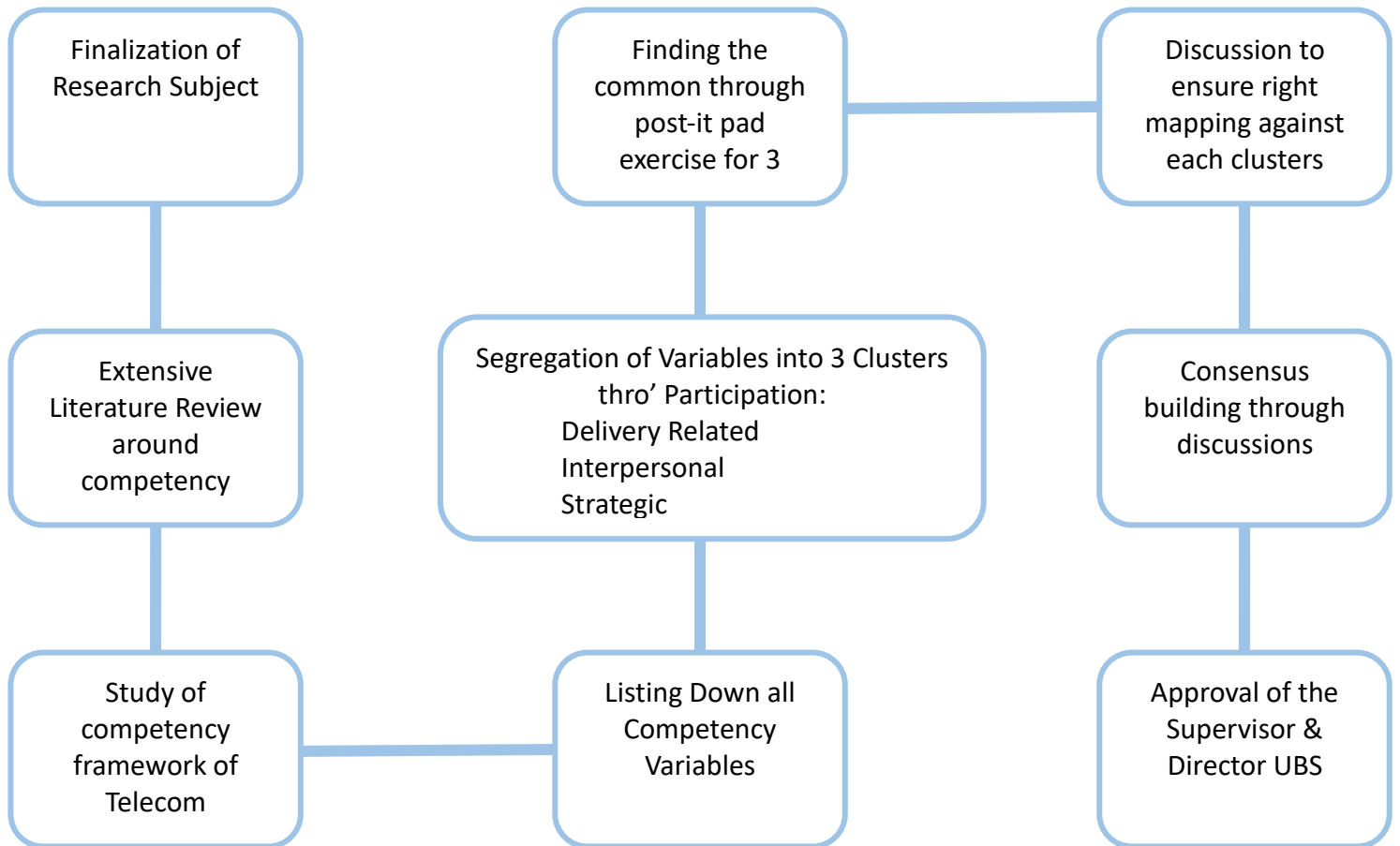
These Core Competencies summarize the capabilities that are important across all jobs and that we believe collectively drive superior performance and deliver overall success. At the same time, these Competencies vary according to the specific job duties and requirements as per the organizational needs. A workshop based approach was taken to arrive at the variable competencies which drives superior performance at work. Since all the major telecom operators had their own competency frameworks it was pertinent to have a common framework and to put

A systematic review of Research design and methods used to study the Impact of Competency Variables on the Performance of Highly Effective Employees in Indian Telecom Industry

PJAEE, 18(1) (2021)

them into three clusters, namely Delivery Related (achieving results), Interpersonal (building relationship) and Strategic (planning for future).
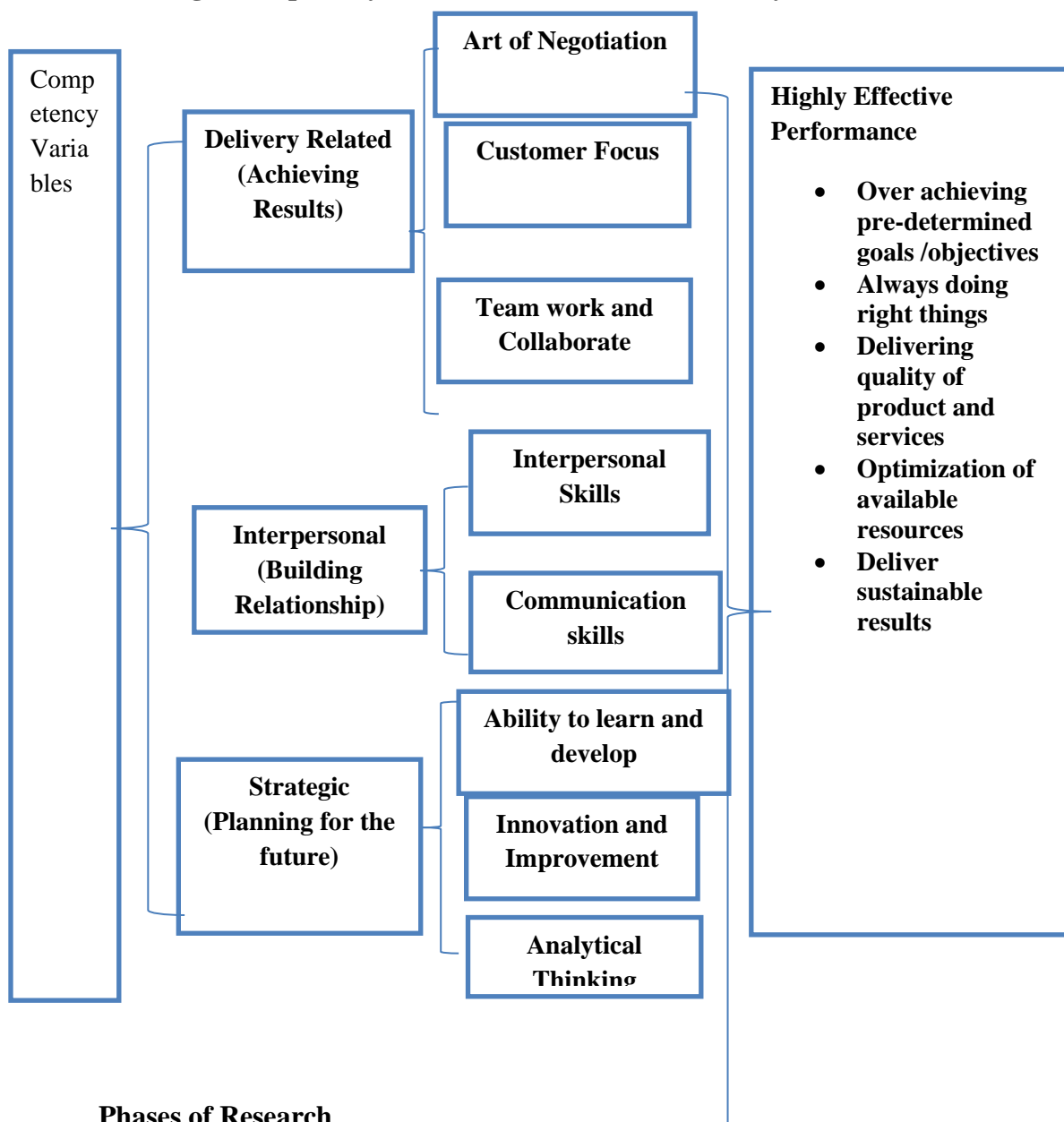Summary of the exercise is appended as under:

Companies	Cluster-1	Cluster-2	Cluster-3
	Delivery Related (Ach Results)	Interpersonal (Building Relationship)	Strategic (Planning for future)
Idea	Customer Focus	Team work and Collaboration	Vision & Strategy
	Get Results	Communicate to Influence and engage	Innovates and Improves
	Business Acumen		Develop Self & Others
Tata Tele Services	Customer Driven Excellence	Valuing employees and partners	Focus on future
	Focus on result and creating values	Social responsibility	Managing for innovation
	Agility		Visionary Leadership
	Management by fact		Organizational and personal learning
			Systems perspectives
Vodafone	Drive	Engage	Change
	Applied Thinking		
Airtel	Achieving Results	Empowering & Developing	Aligning Strategies and systems
	Delighting the customer	Valuing People	Facilitating Change & Innovation
	Business and Commercial acumen	Living The values	
	Drive Execution Excellence	Building and Nurturing partnership	
Aircel	Functional Competence	Collaboration	Breakthrough Thinking
	Customer centricity	Influencing outcomes	People Development
	Drive for excellence		People Leadership
Reliance Jio	Result orientation	Communication Skills	Reliance Culture
	Creativity	Team Player	Dealing with Ambiguity
	Functional/ Technical Area	Leadership Skills	Flexibility and adoptability
	Analytical Skills		
Competence @ Work	Ach Orientation	IP Understanding	Develop Self and Others
	Concern for Order	Impact and Influence	Organizational Commitment
	Quality and Accuracy	Organizational Awareness	
	Initiative & Information seeking	Relationship Building	
	Customer Service Orientation	Team Work & Collaboration	
	Analytical Thinking, Conceptual Thinking	Team Leadership	
	Managerial & Technical expertise		

A systematic review of Research design and methods used to study the Impact of Competency Variables on the Performance of Highly Effective Employees in Indian Telecom Industry

PJAEE, 18(1) (2021)

Flow diagram of the process followed

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┌──────────────┐         ┌──────────────┐         ┌──────────────┐
│ Finalization │         │ Finding the  │─────────│ Discussion to│
│ of Research  │         │common through│         │ ensure right │
│   Subject    │         │ post-it pad  │         │mapping against│
│              │         │exercise for 3│         │ each clusters│
└──────────────┘         └──────────────┘         └──────────────┘
       │                        │                        │
┌──────────────┐   ┌──────────────────────────┐   ┌──────────────┐
│  Extensive   │   │ Segregation of Variables │   │  Consensus   │
│ Literature   │   │ into 3 Clusters thro'    │   │building through│
│  Review      │   │ Participation:           │   │ discussions  │
│  around      │   │ Delivery Related         │   │              │
│ competency   │   │ Interpersonal            │   └──────────────┘
└──────────────┘   │ Strategic                │          │
       │           └──────────────────────────┘   ┌──────────────┐
┌──────────────┐            │                      │ Approval of  │
│  Study of    │   ┌──────────────┐                │the Supervisor│
│ competency   │───│ Listing Down │                │ & Director UBS│
│ framework of │   │ all Competency│               │              │
│   Telecom    │   │  Variables   │                └──────────────┘
└──────────────┘   └──────────────┘
```

Final eight competency variables identified for the study

Phases of Research

A systematic review of Research design and methods used to study the Impact of Competency Variables on the Performance of Highly Effective Employees in Indian Telecom Industry

PJAEE, 18(1) (2021)

The entire research has been completed in the following phases:

Phase I: Understanding and collecting the existing literature available literature on
            Highly Effective Employee and Competency Variables:
In Phase I existing literature available in the form of research paper or article or any other way has been collected, studied and sorted according the research objectives and requirements.

Phase II: Exploration of competency variable and defining it:
In the next phase competency framework of major telecom companies were studied at length and eight common competencies were identified for the purpose of study. Apart from the study of frameworks, personal meetings with the Head of HR were also contacted and discussed to understand what drives high level of performance at work. Having identified the competencies, competency indicators were ascertained against each competencies to develop the questionnaire.

Phase III: Peer Review and validation:

In this phase the draft questionnaire has been designed keeping in mind to record the responses on highly effective employee and competency variable. The draft questionnaire has been sent to peers in telecom industry and also to few scholars to validate the same. A pilot study was also conducted to check the question design before finally embarking into the field work.

Phase IV: Finally the responses has been collected from the employees of Idea, Vodafone, Airtel and Reliance Jio of different position. And a proper frame work has been developed.

Research Methodology

Research Methodology is a process through which a systematic project work has been conducted. It is a guideline for any research proposal. In this research correlation has been applied to find out the relationship between the variables. In the research both type of data has been collected primary as well secondary. In this study the four main telecom companies were covered Idea, Airtel, Vodafone and Reliance Jio. This research analyses the relationship between competency variables viz: customer focus, analytical thinking, team work and collaboration, innovation and improvement, communication skills, ability to learn and develop and art of negotiation and the performance of highly effective employees.

Research Design

A research design is a framework or blueprint for conducting the research project. It details the procedures necessary for obtaining the information needed to structure and/or solve research problems. A good design will ensure that the research project is conducted effectively and efficiently. It involves the following components or tasks. (i) Define the Information needed. (ii) Design the exploratory, descriptive and/or causal phase of research (iii) Specify the measurement and scaling procedures (iv) Construct and pretest a questionnaire (interviewing form) or an appropriate form of data collection. (v) Specify the sampling process and sample size (VI) Develop a plan for data analysis.

Conclusive research has its major objective(s) as the description of something – usually the market characteristics or functions. A descriptive design requires a clear specification of the who, what, when, where, why and way (i.e., six Ws) of the business research. The study was a descriptive study in which single cross-sectional design was used by the researcher in which one sample of respondents was drawn from the target population and information is obtained from this sample only once.

A good design must be flexible, having a minimum bias and maximize reliability, yield maximum information and covers many aspects of the problem. The study is descriptive in nature and the cross sectional design is used and the sample is drawn from the target population. In this study, two types are variable are there Independent and Dependent variable. Part A: Demographic Profile consist of 5 variables Viz: Gender, Age, Educational Qualification, years of association with the organization and Position in the organization. Part B General Background consist of 4 items. Part C consist of 5 items on the perception of highly effectives employees captured with the help of 5 point Likert scale (1=strongly disagree, 2=Disagree, 3= neither disagree nor agree, 4= Agree and 5= Strongly Agree). Part C consist of 8 items, Customer Focus, Analytical Thinking, Team work and Collaboration, Innovation and Improvement, Communication skills, Ability to learn & Develop, and Art of Negotiation, responses on all the variables has been captured with the help of 5 point Likert scale (1=Strongly disgree,2=Disagree, 3= Neither disagree nor agree, 4= Agree and 5= Strongly Agree)

A systematic review of Research design and methods used to study the Impact of Competency Variables on the Performance of Highly Effective
Employees in Indian Telecom Industry

PJAEE, 18(1) (2021)

Data Collection

The data for the present study was collected by the researcher with the help of self designed scale. The scale consisted of item or statements having five point Likert scale (from strongly disagree to strongly agree).

Sources of Data

There are two types of data – Primary and Secondary. The data was collected from both primary as well as secondary sources.

i. **Primary Sources:** The data has been collected from the employees of telecom companies. There was no minimum criterion to select the employee in terms of number of years in the organization, although the questionnaire was having such parameter while administering it to the respondents. Researcher tried to cover and get the responses from the employees of all the Telecom companies in the market.The data has been collected from the employees those who are working in the companies operating in Telecom business.

ii) **Secondary Sources:** Secondary source of data has also considered

While collecting the data. The data has been collected from the available literature in the magazine, research articles, journals, books and various web sites. The different sources have provided the facts of competencies, competency mapping and competence.

Sampling Plan

The sampling plan provides the details of the universe, sampling unit, size of the sample and parameter of interest.
The universe: The universe is infinite. In the present study the universe includes all the highly effective employees (as identified from their respective performance management systems) of all the major telecom companies like Vodafone, Idea, Bharti Airtel, and Reliance Jio, in Punjab, Haryana and Himachal Pradesh.

Sampling Unit: Sampling unit is an element that is available for selection at some stage of the sampling process. In the present study employee, especially those who are the high performer has taken as sampling unit. A convenience sampling technique was used for the present study. The survey is mainly developed by focusing on the employees of the Telecom companies.

Sample Size: Sample size refers to the number of elements to be included in the study. For collecting the primary data researcher developed the scale. To collect the sample of respondents, 750 respondents were approached out of which 530 valid responses were received hence 70% people were responded or the response rate was around 70%. The results, tables and figures show the demographic profile of the sample of respondents on gender, age, educational profile, association with organization and position.

Sampling Technique: Selecting a sampling technique involves several decisions of a broader nature.

For this study, convenience sampling technique was used for collecting the primary data. The method used by the researcher for data collection was survey method. Since the respondents were the top talent of the organization, the HR heads of the company distributed the questionnaire to them to maintain the confidentiality of the respondent on a paper based questionnaire and no web based tool was used to capture the responses. The questionnaire also contained a well-devised closed and open-ended questions to capture their opinion. Researcher considered total sample size of 530 employees from different identified telecom companies.

Tools and Techniques

The following statistical tools were applied using Statistical Package of Social Science (SPSS 20.0) and MS-Excel 2007 for the analysis of collected data and to arrive at meaningful conclusions.
Co-relation
Some groups were analyzed by using co-relation coefficient. Co-relation coefficient were used in assessing the independent variable like Product and its sub variables, People and its sub variables and Process and its sub variables on managerial effectiveness. In co-relation, Pearson co-relation coefficient r has been considered, the value is varies between -1 (shows negative association) to

A systematic review of Research design and methods used to study the Impact of Competency Variables on the Performance of Highly Effective Employees in Indian Telecom Industry

PJAEE, 18(1) (2021)

+1 (positive association). The significant association has been calculated by 5% level of significance.

Pearson Correlation is the value of **r,** i.e. correlation coefficient, which show the relations ship between the two variables. The value of rlies between -1 to +1, negative sign shows the relationship is negative and positive sign shows that relationship is positive. Sign shows the level of significance (95%), on the basis of significance the hypotheses is accepted or rejected.

Validity & Reliability

For the purpose of data analysis first reliability check has been done. Reliability of scale has checked by applying the Cronbach's alpha (for all three scales it is ,.900,.824 and .893)and it has been interpreted in the way that data is reliable.

Test of Reliability and Validity

Cronbach's alpha method were used to test the reliability of the scale. The reliabilities of each identified dimensions were also determined by Chronbach's alpha method. The validity of the scale in quantitative terms was assessed by reliability index (square root of reliability coefficient).

In order to create validity the researcher has to make sure that the empirical findings are in correlation to the theoretical topics. Reliability is related to the degree of trustworthiness. If a researcher measures the same things, using the same instrument, at different point of time and find different results, indicates a lack of reliability (Nachmias and Nachmias 1996). The reliability of the scale was determined by calculating the reliability coefficient of Cronbach Alpha on the sample of 459 respondents. With the help of scale the alpha reliability coefficient was found to be Cronbach's Alpha=0.900 which is excellent, according to different theory of reliability value above 0.6 is appropriate. The value of the Cronbach's alpha for the 5 items i.e. perception of Highly Effective Performance is 0.824 and for the 8 items of perception on importance of behavioral competencies on work place is 0.894 which is considered as good.

Nachmias and Nachmias (1996) claimed that validity was created by making sure that the questions used have a clear connection to what the researcher intends to investigate. Therefore, a cautious effort was made for each question and was made according to deep-rooted theoretical topics.

Validity of Data

The questionnaire was tested for its validity and reliability. Validity is the property by which a questionnaire measures what it is supposed to measure. For the purpose of checking validity the questionnaire has been send to senior employees of telecom industry as well as researchers and academicians. After receiving their comments the items which scored more than 75%(validation score of 3.80) consent has been kept in the questionnaire. The questionnaire had been validated by the peers also. The changes they suggested were incorporated in the Questionnaire and responses recorded.

Hypotheses

In this study, hypothesis pertaining to effect of various competency variables such as Customer focus, Analytical thinking, Teamwork and collaboration, Innovation and improvement, Communication skills, Interpersonal skills, Ability to learn and develop and Art of negotiation on highly performance indicators such as over achieving goals, doing right things, Delivering quality product and services, optimization of resources and Deliver sustainable results, Punjab, Haryana and Himachal Pradesh were tested. These hypotheses are listed below as per the dimensions identified.

H_{01} : Customer focus is not significantly correlated with highly effective performance.

H_{01a} :Customer focus is significantly correlated with highly effective performance.

H_{02} : Analytical thinking is not significantly correlated with highly effective performance.

H_{02a} :Analytical thinking is significantly correlated with highly effective performance.

H_{03} : Team work and Collaboration is not significantly correlated with highly effective performance.

H_{03a} :Team work and Collaboration is significantly correlated with highly effective performance.

A systematic review of Research design and methods used to study the Impact of Competency Variables on the Performance of Highly Effective Employees in Indian Telecom Industry

PJAEE, 18(1) (2021)

H_{04} : Innovation and improvement is not significantly correlated highly effective performance.

H_{04a} :Innovation and improvement is significantly correlated with highly effective performance.

H_{05} : Communication skills are not significantly correlated with highly effective performance.

H_{05a} :Communication skills are significantly correlated with highly effective performance.

H_{06} : Interpersonal skills are not significantly correlated with highly effective performance.

H_{06a} :Interpersonal skills are significantly correlated with highly effective performance.

H_{07} :Ability to learn and develop is not significantly correlated with highly effective performance.

H_{07a} :Ability to learn and develop is significantly correlated with highly effective performance.

H_{08} : Art of negotiations is not significantly correlated with highly effective performance.

H_{08a} :Art of negotiations is significantly correlated with highly effective performance

Results and findings
After conducting the statistical analysis of hypothesis formulated, it can be summarized as under

No	Hypothesis	Accepted/Rejected	Significance (P value)	Pearson Correlation (r)
H_{01}	Customer focus is not significantly correlated with highly effective performance.	Rejected	0	0.484
H_{01a}	Customer focus is significantly correlated with highly effective performance.	Accepted		
H_{02}	Analytical thinking is not significantly correlated with highly effective performance.	Rejected	0	0.35
H_{02a}	Analytical thinking is significantly correlated with highly effective performance.	Accepted		
H_{03}	Team work and Collaboration are not significantly correlated with highly effective performance.	Rejected	0	0.392
H_{03a}	Team work and collaboration are significantly correlated with highly effective performance.	Accepted		
H_{04}	Innovation and improvement are not significantly correlated highly effective performance.	Rejected	0	0.366
H_{04a}	Innovation and improvement are significantly correlated highly effective performance.	Accepted		
H_{05}	Communication skills are not significantly correlated with highly effective performance.	Rejected	0	0.422
H_{05a}	Communication skills are significantly correlated with highly			

A systematic review of Research design and methods used to study the Impact of Competency Variables on the Performance of Highly Effective Employees in Indian Telecom Industry

PJAEE, 18(1) (2021)

	effective performance.			
H_{06}	Interpersonal skills are not significantly correlated with highly effective performance.	Rejected	0	0.419
H_{06a}	Interpersonal skills are significantly correlated with highly effective performance.	Accepted		
H_{07}	Ability to learn and develop is not significantly correlated with highly effective performance.	Rejected	0	0.384
H_{07a}	Ability to learn and develop is t significantly correlated with highly effective performance.	Accepted		
H_{08}	Art of negotiations is not significantly correlated with highly effective performance.	Rejected	0	0.383
H_{08a}	Art of negotiations is significantly correlated with highly effective performance.	Accepted		

Findings and Discussions

The study achieves its objective to have a systematic review on research methodology, sampling techniques and other instrument used to study the impact of competency variable on the performance of highly effective employees in telecom sectors. The research methods to test the hypotheses were also explored and were supported with findings. In this paper various facets of quantitative research were discussed. It explained the phenomena of collecting quantitative data which were analyzed using mathematically based methods.

In the study data was collected from the major telecom operator were considered i.e. Idea, Vodafone, Reliance Jio and Bharti Airtel. The geographical area of the research was focused to Punjab, Himachal Pradesh and Harayana. For the purpose of the research extensive survey has been conducted and data has been collected in the form of questionnaire. Data has been collected from the employees of telecom industry irrespective of gender. The participation percentage of the companies were Idea Cellular 30.9%, Bharti Airtel 29.1%, Vodafone 24.5% and Reliance Jio 15.5%.

With the help of statistical results it can be concluded that all the 8 competency variables i.e. Customer focus , Analytical Thinking, Team work and collaboration , Innovation and Improvement, Communication Skills, Ability to learn and develop , and Art of Negotiation are positively correlated with highly effective performance.

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A systematic review of Research design and methods used to study the Impact of Competency Variables on the Performance of Highly Effective Employees in Indian Telecom Industry

PJAEE, 18(1) (2021)

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