

CHAPTER 3- RESEARCH METHODOLOGY

CHAPTER 3 - RESEARCH METHODOLOGY

Research Design

Descriptive research enables to get insights into a phenomenon and sanctions a basis for decision-making. It deals with the study of status, which is widely used in education and the behavioural sciences. However, descriptive studies have a constraint to explain why an event took place (Punch, 2005). On the other hand exploratory research aims at discovery of ideas and thoughts to get insight into a problem and comprehension for more precise investigation (Yin, 1994). Singh (2007) states, exploratory research as foundation of conclusive research to determine initial research design, sampling and data collection methods. Thus, considering the objective of the study and methods of data collection, analysis and inferences, a descriptive as well as exploratory research design has been adopted. Descriptive research has been used to analyse and present biographical attributes of the respondent's viz., age, gender, education and designation etc. Exploratory research has been used to establish the relation between independent and dependent variables, and infer on the basis of analysis. The tools and techniques used in data analysis has been presented at table no. 7.

Sampling Plan

Target Population

Managerial cadre employees are chain between top management and the productive workforce of any organisation (Kumarasinghe and Hoshino, 2010). Managerial cadre employees paly important role in deciding and execution long term plans (Tovmasyan, 2017). Therefore knowledge of characteristics of this managerial cadre employees is a decisive factor for the long terms sustainability of any organisation. Hence in this study, Gen Y managerial cadre employees were considered as respondents. Gen Y managerial cadre employees were considered as respondents taking into account equal no. of respondents from both Public (PSUs) and Private (Pvt) Sector Companies. Within these sectors an equal representation of manufacturing and service industry was assured. Further, a list of eligible units (Gen Y managerial cadre) in each sample organisation was sought. From every sampled organisation, a sample of eligible units were selected randomly and sample size was decided using proportional allocation. Each company was treated as a stratum (see annexure 2). Thus, a stratified random sampling technique was adopted in this study.

Basis of Stratification

Literature highlights a need for empirical studies in the field of motivation and organisational behaviour in wider institutional context (Perry, 2000). There exists a great difference in work motivation between public sector and private sector employees (Wright, 2001). One such study was carried out by Goulet and Frank (2002) which examined similarities and differences in organisational commitment on the basis of sectors. They underlined a significant difference in organisational commitment on the basis of sector. Therefore, stratification of target population in this study was carried out on the basis of organisations they are working for.

Table 3

Population Stratification

	Sample Companies : BSE/ NSE/ NYSE Listed	
	Public Sector Companies	Private Sector Companies
Manufacturing	<u>Condition for Selection</u> Head Office/ Registered Office/ major operation in Gujarat	
Service/ Non-Manufacturing		

Sample Size Determination

To determine sample size, statistical formulae have been used. Population of Gen Y in managerial cadre is finite. The rationale for consideration of the population being finite is twofold-

1. Companies considered for the study are listed on BSE/ NSE/ NYSE having major operations in cities of Gujarat, viz., Vadodara, Ahmedabad and Bharuch.
2. Companies were selected on the basis of their readiness to participate in the study.

Thus, for this study, an approximate population was assumed to be 1, 00,000.

Sample Unit- Any employee who is Gen Y (according to his/ her birth year falling in the year range of 1981-2000 and working in the managerial cadre, viz., Supervisor, Officer, Manager and General Manager).

Sampling Frame- Sampling frame was the employee list available with HR department that is consisting of employees working on the day of visit to the company.

Sample size- To conduct such studies in social science, significance level is 0.05 (Ary, Jacobs, and Razavieh, 1996). With the help of statistical formulae at 5% margin of error, Krejcie and Morgan (1970) suggested calculation of sample size as follows.

Table 4

Sample Size Determination

Measurement	Population	
	Finite	Infinite
Continuous	$n = \frac{z^2 * N * s^2}{(N-1)e^2 + Z^2 s^2}$	$n = \frac{Z^2 * s^2}{e^2}$
	(n = 119, for N=100,000)	n = 2964
Categorical	$n = \frac{z^2 * N * p * q}{(N-1)e^2 + Z^2 * p * q}$	$n = \frac{Z^2 * p * q}{e^2}$
	(n = 383, for N=100,000)	n = 384

Thus, considering table No. 4 for a finite population of 100,000 this formula recommends a sample size $n = 383$ appropriate for this study as measurement of data is considered as categorical and continuous both. To avoid incomplete/ invalid responses, it was decided to do 10% oversampling. Therefore, $421.3 \approx 425$ responses were required to conduct this study. However, total 440 valid responses were collected for this study as there are four strata (110 respondents for each stratum). Further, the target population is homogenous in terms of respondent's education, socio-economic background and age range.

Data Collection

Data Source

To conduct this study data was collected from both primary and secondary sources. The Source of primary data is responses from Gen Y managerial cadre employees from both the manufacturing and service industries of public and private sector. Secondary data was collected from various websites, government reports, books, journals and newspaper dallies.

Tools for data Collection

To conduct this study hardcopy questionnaire was sent to all respondents through HR managers. Apart from hardcopy few sample companies requested the e-questionnaire therefore a google link was shared through e-mail.

Data Collection Instrument Development

The data collection instrument was developed to find out characteristics and preferences of Gen Ys of managerial cadre. An in depth analysis of available literature was carried out to construct data collection instrument. Inclusion of all the items was assured through content validity (refer annexure 3). Similarly reliability of the instrument for internal consistency of "Summated Rating Scale" questions viz., team player, distracted & destructible, and opinion towards trade unions etc. was assured through Cronbach Alpha (refer table 6 and annexure 4).

Biographical Section

This section includes necessary demographic information. Individual information like name of the respondent, contact no., email id, and religion were included as optional columns to protect respondent's privacy (Winstanley and Woodall, 2000). Similarly, a mandatory column to find out the age of the respondent "birth year" was included instead of "date of birth". However, this section contained mandatory information such as gender, schooling strata (rural/ urban/ partly both), education level, education stream, birthplace (state/ UT), and birthplace strata (rural/ semi urban/ urban). Further, professional information viz., the sector (Manufacturing-Service and Public-Private Sector) they work in, year of joining present organisation, total work experience, no. of jobs changed during professional career, present designation and no. of subordinates working under them were asked to categorise the respondents.

Questionnaire Section

Questionnaire section was developed by considering various articles and papers by review of literature. Table 5 shows question nos., Dimensions of characteristics that the question covered, measures and scale used. Robert Half International (2008) highlights that a job seeker considers pros and cons of each and every factor before choosing his job. Decision to opt first job may vary from person to person depending upon existing circumstances (Bazzhina, 2015). Thus, bearing in mind appropriateness of these factors of target population i.e. their education, socio-economic background and most important the generation they belong to, a list of such ten factors were included in a question no.20.

Numerous factors influence a person to choose a particular profession (Alexander and Twinomurinzi, 2012). To test these factors empirically on Indian Gen Ys, five predominant reasons were considered at question no.21 to administer on a formative scale.

After getting a job, an employee evaluates himself and his employment conditions with his counterparts working across organisations (Bansal, 2014; Maurer, 2018). Therefore, to know the gap between Gen Y's expectation and fulfillment of those expectations (Singh, Bhandarkar and Rai, 2012), by their employing organisations, a gamut of factors was enlisted from available literature. Out of those factors, an array of seven most appropriate and prevalent factors were included in the instrument at question no. 22 to gauge gap between expectations and fulfillment of those expectations of Gen Y.

When in job, people have various aspirations to grow in life personally and professionally. Such aspirations if not fulfilled people may leave their current job. Such aspirations are called stimulus which make reasons to leave the current job (Purang and Sharma, 2005). Such six reasons were included at question no. 23 on a formative scale. While doing data analysis these items were converted into reflective scale for grouping those six items into three constructs i.e. lower level, middle level and higher level. Internal consistency of each two item scale was assured through Split Half Reliability as well as Cronbach Alpha (refer annexure 12).

Learning new skills and attitude is an ongoing process, and needs to be established on various parameters, especially w.r.t. participants (Truitt, 2011). Accordingly, question no. 24 intends to explore Gen Y's inclination towards learning new skills and attitude towards training and development programmes (Salleh, Amin and Mamat, 2017). Their training and development orientation was measured on criterion viz., willingness, cost, comfort, impacts on career, and outcome. A consent to put extra effort and acceptance of increased responsibility, show employees' willingness for learning. Similarly, expecting an element of self-development indicates their positive attitude towards self-development in each and every conditions viz., at the cost of time, money and energy.

Literature suggests key dimensions of training as technical, administrative, soft skill, managerial and leadership in a context of a business organisation. Thus, Q. no. 25 was framed to find out and compare thrust area of training w.r.t. Gen Ys.

Few researchers found that people belonging to Gen Y are team players (Brown et al., 2009; Ethics Resource Centre, 2010). To check such attributes empirically, a construct with six items was included at Q no. 26 in the instrument.

It was found that Gen Ys get distracted easily (Ethics Resource Centre, 2010). Such 'distracted' nature may result in poor performance maligning both individual and organisation. Thus, to find out such attributes, a construct with six items was included at Q. 27 in the instrument.

Question no. 28 was framed to know Gen Y's perception towards trade unions as it is perceived that Gen Y may not like to join trade unions due to their Tech-savvy nature. Trade unions and their activities are almost always perceived negatively.

Reliability of all these three constructs for Q.26, 27 and 28 were confirmed during pilot test (please refer table 7). Further, reliability of all these three constructs were also checked for complete data and found approximately same as pilot study results.

As Gen Y is called digital natives and are tech savvy (Hershatte and Epstein, 2010) however, their preferred usages of technology is not known. Thus, Q. 29 was asked to find out their preferred usages of technology (ICT) that included rank order question comprising five areas of utilization. However, a set of three questions to gauge tech savvy traits had also been included at Q. 32 (f), (g) and (h) at section 3 on a formative scale.

Creating a sense of belongingness is indispensable for sustainability from human resource point of view. There are various factors that create sense of belongingness amongst employees (Green, Gino and Stass, 2017). Question no. 30 with six factors affecting sense of belongingness was included to gauge preferences of Gen Y to get them feeling of belongingness to their organisation.

After finding out feeling of belongingness, an attempt was required to know the factors that affect morale (Ngamb, 2011; Shelar and Phadatare, 2013) of Gen Y at workplace. Question 31 was asked with five predetermined factors to gauge the perception of Gen Y about factors that affect their morale at their workplace.

Section 3 was included in the instrument with Q. 32. The question cross examines attitudes, perceptions and preferences already asked previous questions in the instrument. Moreover, question related to other traits viz., inquisitive, adaptive, innovative, autonomy, entrepreneurial, social networking, and communicative etc. were also being included as questions. These questions were being administered on a formative five point ordinal scale. For precise details of dimensions, measures and scale of the instrument please refer table no. 5.

Table 5

Various Dimensions Covered in Questionnaire, their Measures and Scales Used

Q. Nos.	Dimensions	Measures	Scale
1-19	Biographical Information	Used for descriptive analysis and Hypothesis Testing	Independent variables
20	Factors considered While Opting for First Job	a. Due to family needs b. Structure of pay and perks c. Portfolio/ Nature of Work d. Opportunity for personal development e. Position f. Organisational/ Company image g. Nearness/ Proximity to hometown/residence h. Work life balance i. Freedom to work as I like j. Less responsibility in job	Reflective: Summated Rating Scale Formative: Five point ordinal Scale
21	Factors influencing choice of profession	a. Because of interest in this profession b. According to my family guidance c. Based on salary and fringe benefits d. My qualification matches to this profession e. Based on employment/ career opportunities	Formative: Five point ordinal Scale
22	Motivating factors to continue in the present job	a. Pay and perks b. Decent work environment c. Courteous boss d. Recognition e. Job security f. Flexible work schedule g. Career development opportunities	Formative: Five point ordinal Scale
23	Decisive factors to switch over jobs in future	a. Increased salary and fringe benefits b. Seeking Life time employment c. Appointment at a higher position d. Career development opportunities e. Environmentally and socially responsible organisation f. Organisation conforming moral and ethical practices	Reflective: Summated Rating Scale Formative: Five point ordinal Scale

24	Attitude towards learning new skills	a. Even if I need to put extra effort to learn b. Even if my area of responsibility is increased c. Even if I get slightly less fringe benefits d. Provided I am comfortable to do so e. Unless it will have impact on my career f. Provided it has an element of self-development	Formative: Five point ordinal Scale
25	Preferred thrust areas of training	a. Technical b. Administrative c. Soft Skills d. Managerial e. Leadership	Formative: Five point ordinal Scale
26	Perception about characteristics of a 'team'	a. Free flow of communication b. Coordination c. Collaboration d. Trust e. Freedom f. Adaptability	Reflective: Summated Rating Scale
27	Feelings of Gen Y Leading to Distraction in Work	a. Helplessness b. Anxiety c. Forget some of the tasks assigned to me d. Emotional problems e. Lack attention for a long time at a particular task	Reflective: Summated Rating Scale
28	Perception towards trade unions	Trade unions a. play a constructive role in Indian economy b. are necessary for protecting interest of employees c. educate members about their duties and responsibilities d. provoke their members unnecessarily (R) e. are hurdle to productivity (R) f. are politically influenced (R)	Reflective: Summated Rating Scale
29	Preferences for utilization of ICT and mobile gadgets	a. To keep in touch with friends and family b. Utilising for professional accomplishment c. Information Access and study purpose d. Personal use like online shopping and entertainment e. Social Media	Preference: Rank order
30	Preferences for factors affecting sense of belongingness	a. Amenities/ Facilities b. Social Security c. Welfare Activities d. Organisational Culture e. Employee's Overall Development f. Recognition at Workplace	Preference: Rank order
31	Perception about factors affecting morale at workplace	a. Justice and Equity b. Pay and Perks c. Work life balance d. Freedom at workplace e. Physical Amenities at workplace	Preference: Rank order

32	Attitude towards an array of professional and personal characteristics	a. Job delight b. Autonomy c. Tech savvy d. Inquisitive e. Adaptive f. Innovative	g. Industrious h. Entrepreneurial i. Social networking j. Hesitation k. Daring l. Communication etc.	Formative: Five point ordinal Scale
----	--	--	---	--

Note: (R): Reverse Coding done for data analysis

Instrument Validation Procedures

Validity

Validity of an instrument can be divided into predictive, concurrent, content, and construct validity. However, predictive and concurrent are considered together as criterion validity (Cronbach and Meehl, 1955). Content validity can be confirmed by ensuring that all the required content to conduct the study is included in the instrument. Therefore, to validate the data collection instrument, expert opinion in addition to guiding teacher had been sought. Experts consulted were Prof. Urmi Biswas- Professor of Psychology (Faculty of Education and Psychology, MSU), Prof. R.K. Srivastava- Professor of Statistics (Department of Statistics, MSU) and, Mr. Sudhir Sethi- Senior Vice President-HR, INOXCVA (an industry expert). The developed instrument for data collection fulfils all the validity parameters i.e., content, construct and criterion. A content validity table is attached as *annexure 2* which enlists all items pertaining to Gen Y's characteristics affecting organisational sustainability. Almost all the items enlisted in *annexure 2* have been covered in the data collection instrument. Factor analysis and correlation matrix (Cronbach and Meehl, 1955) was created and checked for construct validity for Q. Nos. 20, 23 and 32 (*refer annexure 6, 7 and 12 for Q. no. 20, 32 and 23 respectively*).

Reliability

Reliability denotes the consistency of a measurement. There are various ways to measure consistency, but, test-retest reliability (over time), internal consistency (across time) and, split half are most practiced methods. To measure the internal consistency of constructs Cronbach Alpha was carried with the help of received responses during pilot test, and at the time of complete data analysis too (please refer table 6). For such test, SPSS software was used. Cronbach α normally ranges between 0 and 1, however, George and Mallery (2003) suggested a rule of thumb as

“ $\alpha > 0.9$ - Excellent, $\alpha > 0.8$ -Good, $\alpha > 0.7$ - Acceptable, $\alpha > 0.6$ -Questionable, $\alpha > 0.5$ - Poor, and $\alpha < 0.5$ -Unacceptable”.

Table 6

Internal Consistency table

Construct	No. of items	Instrument	Cronbach's Alpha	
			Pilot Study	Complete Data
Team characteristics	6	Likert Summated Rating Scale	0.90	0.88
Distracted	5	Likert Summated Rating Scale	0.91	0.90
Opinion towards TUs	6	Likert Summated Rating Scale	0.86	0.88

Note: Reverse coding for three items of construct "Opinion towards Trade Unions" was carried out. (Refer annexure 4 for detailed Reliability test reports).

Statistical Tools and Techniques

While carrying out data analysis, descriptive statistics has been used to reveal respondents profile and, inferential statistics to analyse data. Normality is assumed in this research as the sample size > 30 , (Donaldson, 1968). Thus, considering the sample size of 440, one sample t-test for five point formative scale was applied to find out significance. For bivariate analysis of formative scale, two independent sample Kolmogorov-Smirnov (K-S) z test was applied. However, in case of significant values, one tailed Kolmogorov-Smirnov z was being conducted to find out the direction. For multivariate analysis of formative scale, K Sample Kruskal Wallis H test was applied. For analysis of rank order questions, Mann Whitney U test was applied.

Parametric test like one sample t-test, two independent sample t-test and one way ANOVA was carried out for univariate, bivariate and multivariate analysis respectively. Therefore, for homogeneity of variance, Levene's test was opted. For significant values, Tuckey post hoc analysis was being considered in case of homogeneous variance, else Games Howell post hoc was taken into account. Table 7 has been incorporated to have a quick look to tests applied in this study. Further, a table of appropriate statistical tests for different scales of measurements as suggested by Stastutor (n.d) is attached at *annexure 5*.

Table 7
Statistics Used for Analysis

Types of Data Analysis	Analysis Type	Parametric	Non Parametric
Hypothesis Tests	Univariate	One sample t-test	
	Bivariate	Two Independent sample t-test	One tailed Two Independent Sample Kolmogorov- Smirnov Z test, Two tailed Two Independent Sample Kolmogorov- Smirnov Z test, Mann Whitney U test & Chi-Square test,
	Multivariate	One way ANOVA Post Hoc Tukey & Games Howell	K sample Kruskal -Wallis H test
Correlation		Pearson r	
Factor Analysis	Exploratory Factor Analysis (EFA) Extraction method: Principal Component Analysis (PCA)		
Descriptive	Frequency, Per cent, Mean		

Assumptions

Before applying inferential statistics for data analysis, certain statistical assumptions need to be fulfilled to obtain correct test results. However, there are certain exemptions to these assumptions. All assumptions w.r.t. inferential statistics which were applied in this study have been explained during data analysis. For parametric tests viz., one sample t-test, two independent sample t-test and Oneway ANOVA normal distribution of data becomes a binding rule. Despite violation of the normality assumption, there is no real issue for larger sample sizes i.e. $n > 30$ due to the central limit theorem (Ross, 2017).

Moreover, Donaldson (1968) claims ANOVA can be performed accurately for degrees of freedom 40 or more even when the response rate is less than 20%. Despite non normality of data F remains relatively unaffected (Donaldson, 1968). This evidence suggests that when group sizes are comparable the F-statistic can be quite robust despite non normality. A comparison of two categories can be carried out despite non homogeneous variances for $df > 40$. Furthermore, in this study responses were obtained through ordinal or summated rating scale, thus issue of outliers does not exist.

It is assumed that the samples drawn from the population are random w.r.t. non-parametric tests viz., Two Independent Sample Kolmogorov-Smirnov Z test, K Sample Kruskal-Wallis H test and Mann-Whitney U test. The measurement scale for the dependent variable should be at least ordinal for above tests. Further, observations must be independent of each other for Z test and H test, but for U test independence within samples and mutual independence between samples are mandatory assumptions.

For correlations, Pearson r and Spearman's ρ was applied. Assumptions for Pearson r (i) level of measurement for each variable must be continuous (ii) related observations should have a pair of values (iii) free from outliers and, linearity i.e. a straight line relationship between variables should be formed. For Spearman's ρ , (i) variables must be measured at least on an ordinal scale, (ii) paired observations, and (iii) a monotonic relationship.

Delimitation

This study is related to Gen Y employees of managerial cadre of the companies listed on BSE/ NSE/ NYSE. Within the list, public and private sector companies that were engaged in manufacturing/ non-manufacturing (service) activities were included. This study excludes those government organisations which are not engaged in for profit business. Further, this study is limited to organisations having Registered/Head Office or major operation in Gujarat state only, however sample consists of employees from pan India.

Limitation

This study was carried out exclusively considering managerial cadre employees of Gen Y and hence excludes shop floor employees and assistants. It is assumed that employees of managerial cadre and non-managerial cadre may differ in their characteristics hence a study can be conducted to explore characteristics of shop floor employees/ workers that may be helpful in boosting manufacturing in 'Make in India' and 'Self-reliant India' policies era. This study was being conducted pre-COVID 19 pandemic therefore some of the characteristics which depends upon external environment may differ post pandemic.

Future Scope of Study

This study shows various dimensions of Gen Y. Such studies can be conducted to find Gen Y's characteristics w.r.t. various segments such as unemployed youth, potential employees and college students as potential job aspirants. Further, similar studies can be carried out for other generations, and a correlation with other generations can be established. Apart from finding out characteristic of workforce, studies for college students may be carried out to find out their expectations aspirations and characteristics w.r.t. jobs/ employment.