Chapter III

Research Methodology

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RESEARCH METHODOLOGY

This chapter presents the methodology adopted while conducting this research. It starts with the research purpose, research strategy and research approach, followed by the measures used for the study, sampling pattern, data collection and a brief summary of statistical analysis.

3.1 Research Purpose

The research purpose and research questions reveal that this study is descriptive in nature. Descriptive research design describes what exists and help to uncover new facts. The present study investigates the Influence of Job demand, Job resources, Occupational self-efficacy, Job Crafting, Work Meaningfulness on Job Performance among the employees in Engineering industries in Coimbatore district by using a questionnaire. Thus, descriptive research design is mostly suitable for this study.

3.2 Research Strategy

Research questions are considered as the first and the most important condition for differentiating among the different research strategies. Since, this research uses a questionnaire to identify the perception of employees regarding the dimensions of Job demand, Job resources, Occupational self-efficacy, Job Crafting, Work Meaningfulness and Job Performance. Survey strategy is appropriate.

3.3 Research Approach

This research adopts quantitative approach. Since responses for the dimensions of the study is collected using a questionnaire using a 5 point Likert's scale.

3.4 Instrument Development and Validation

Initially, as said by Churchill Jr. (1979) domain of the constructs is identified thorough literature review to understand the definitions of the constructs of interest and to identify an exhaustive list of factors. Following the above guidelines, as discussed in Chapter 2 the study identifies the dimensions of Job Crafting as Task Crafting, Relational Crafting and Cognitive Crafting and Dimensions of Job Demands as Work Pressure,

Cognitive Demands, Emotional Demands, Role Conflict and Hassles and Dimensions of Job Resources as Autonomy, Social Support, Feed Back, Opportunities for Development and Coaching.

3.4.1 Questionnaire used for the study:

The study adopts Likert's 5 point scaling technique to assess the level of opinion of the respondents on the various dimensions relating to the study. The questionnaire consists of two parts. The first part is related to demographic profile of respondents and the second part of the questionnaire relates to the Dimensions of Job Crafting, Occupational Self-Efficacy, Dimensions of Job Demands and Job Resources, Work Meaningfulness and Job Performance.

Demographic factors: Demographics are personal characteristics of a population. This study considers 7 demographic factors namely Age, Gender, Marital status, Education, Nature of Work, Experience and Monthly Income (Appendix I: Q1-Q7).

Measures used for the study: The measures adopted for the study are explained in detail. All the constructs are measured using a 5 point Likert's scale with ends 5: Strongly Agree; 4: Agree; 3: Neutral; 2: Strongly Disagree; 1: Disagree.

The details of the measures used for the study are presented in Table 3.1.

Table 3.1: Measures used for the study

Construct	Operational definition	Author	Number of Items
Job Demands	All aspects of the job that require sustained physical and/or psychological (cognitive and emotional) effort or skills	Tims, Bakker, and Derks (2012, p. 174)	23
Job Resources	Those aspects of the job that are either/or functional in achieving work goals, reduce job demands and the associated physiological and psychological costs, and stimulate personal growth, learning and development	Tims, Bakker, and Derks(2012, p. 174).	17

Construct	Operational definition	Author	Number of Items
Occupational self-efficacy	The perceptions of individuals about their abilities to effectively perform their work task	Rigotti et al. (2008)	6
Job Crafting	The physical and cognitive changes individuals make in the task or relational boundaries of their work	Wrzesniewski and Dutton (2001, p. 179)	19
Work Meaningfulness	The amount of significance people perceive in their work	Rosso et al., (2010)	6
Job Performance	The extent to which employees meet their job requirements according to their manager	Podsakoff and Mackenzie, (1989)	6

Job Crafting: Job crafting has three sub-dimensions namely Task crafting (7 items), Relational Crafting (7items) and Cognitive crafting (5 items). Task crafting refers to initiating changes in the number or type of activities one completes on the job. Relational crafting involves exercising discretion about which one interacts with at work. Cognitive crafting involves altering how one 'sees' their job, with the view to making it more personally meaningful. All three forms of job crafting represent unique ways in which employees initiate physical or cognitive changes to their jobs in order to make them more meaningful and enjoyable, and congruent with their skills, interests, and values.

Job demand

Job demand has 5 sub-dimensions namely work pressure (4 items), Cognitive demands (4 items), Emotional demands (6 items), Role conflict (4 items) and Hassles (5 items).

- Work Pressure is the sum of the amount of work (workload) and the time set aside to finish that work as compared with the employee's ability to cope.
- Cognitive Demand is the mental action or process of acquiring knowledge and understanding through thought, experience, and the senses. This is an important

concept in the workplace, where employees with cognitive skillsets can make all the difference. A few of the essential cognitive demands of the workplace include communication, thinking, and learning. Cognitive skills include the ability to learn, to analyze and reason, to process and apply knowledge, and to evaluate and decide.

- Emotional Demand is dealing with strong feelings such as sorrow, anger, desperation, and frustration at work.
- Role Conflict is being given work tasks without enough resources to complete them and receiving contradictory requests from different people.
- Hassles is a problem brought about by pressures of time, money, inconvenience, etc.

Job resources: Job resource has 5 sub-dimensions namely autonomy (3 items), Social support (3 items), feedback (3 items), Opportunities for development (3 items) and Coaching (5 items).

- Autonomy is the degree to which the job provides substantial freedom, independence, and discretion to the individual in scheduling the work and in determining the procedure to be used in carrying it out.
- Social support is the perception and actuality that one is cared for, has assistance available from other people, and most popularly, that one is part of a supportive social network.
- Feedback is the degree to which carrying out the work activities required by the job provides the individual with direct and clear information about the effectiveness of his or her performance
- Coaching is counselling, guiding or instructing the learner about the short term job-related skills or long term career hazards. Coaching helps to achieve personal as well as organizational goals.Extending traditional training methods to include focus on (1) an individual needs and accomplishments, (2) close observation, and (3) impartial and non-judgmental feedback on performance.
- Opportunities for development is encouraging employees to acquire new or advanced skills, knowledge, and view points, by providing learning and training facilities, and avenues where such new ideas can be applied.

Following this, the study ensures validity. Mason and Bramble (1989) defined validity as the degree to which a test measures what it is supposed to measure. According to Cronbach and Meehl (1955) the researchers need to check Content validity and Criterion oriented validity to ensure that the construct and sub constructs represented the domain areas promptly.

3.4.2 Content validity

Content validity refers to the representativeness or sampling adequacy of the content of the instrument (Kerlinger and Lee 2000). Content validity addresses if the content of the instrument truly represents the content of the property being measured. Methods of assessing content validity include conducting a thorough search of the relevant research on the topic and consulting with experts who are considered knowledgeable in the research field (Churchill, 1979). Content validity is ensured, since all items were adapted from relevant studies previously published in peer-reviewed journals. In addition, experts in academia and practitioners were asked to review the instrument and provide feedback on whether the items adequately covered the relevant dimensions of the topics being covered. 2 practitioners and 3 academicians were contacted for content validation. The panel approved the Instrument for data collection.

3.4.3 Reliability of the constructs

Reliability of the instrument is ensured after ensuring the content validity of the constructs, sequence of the questions in each construct and the inference of the questions through literature review and expert opinion. This needed empirical data. Consequently, a pilot study was conducted with a sample of fifty five respondents from three Engineering Industries. Since, quality of respondents is likely to be a prime important factor in an empirical study care is taken in choosing the respondents for the research. Based on the recommendations from academicians and industry practitioners, both technical and managerial employees are included in the sample. Respondents are selected at random spread across the various departments. Data for pilot study was collected during November 2016.

Reliability: Reliability refers to dependability, stability, consistency, reproducibility, predictability and lack of distortion (Kerlinger and Lee, 2000). An instrument is regarded as reasonably reliable when three conditions are met: (1) it produces consistent results

when applied to the same set of objects, (2) it reflects the true measure of the properties measured, (3) no measurement error is present (Kerlinger and Lee, 2000). Internal consistency, one of the most widely used measures of reliability, measures how consistently individuals respond to items within a scale (Cronbach, 1951). According to Straub (1989.), high correlations between items produce high Cronbach's alpha, and are usually signs that the measures are reliable. The reliability of a multi-item measurement scale is usually assessed using Cronbach's alpha. While there is no standard cut-off point for the alpha coefficient, the generally agreed upon lower limit for Cronbach's alpha is 0.70 (Straub, 1994), although it may decrease to 0.60 (Hair et al., 1998) or even 0.50 (Nunnally, 1978) in exploratory research. The low value may be attributed to the fewer number of items that measure this construct. The construct reliability values suggest that the instrument is reliable. Composite reliability developed by Fornell and Larcker (1981) is used to measure the composite reliability. The general rule is that composite reliability should be equal to or greater than 0.7 (Fornell and Larcker, 1981; Nunnally, 1978; Nunnally and Bernstein, 1994). Table 3.2 shows that this criterion is met since all composite reliability values and Cronbach Alpha values are greater than 0.70 and Average variance extracted are greater than 0.5, which suggests good internal consistency.

Table 3.2: Reliability of the constructs

Construct	Composite reliability coefficients	Cronbach's alpha coefficients	Average variances extracted
Job Demands (JD)	0.932	0.923	0.497
Job Resources (JR)	0.911	0.896	0.538
Job Crafting (JC)	0.928	0.918	0.508
Work Meaningfulness (WM)	0.886	0.839	0.610
Occupational Self-Efficacy (OSE)	0.876	0.830	0.540
Job Performance (PF)	0.868	0.818	0.525

3.4.4 Construct validity

Construct validity, unlike other validities, focuses on theory, theoretical constructs and scientific empirical inquiry involving testing of hypothesized relationships (Kerlinger and Lee, 2000). It refers to the overall degree of correspondence between the constructs and measures used to represent the construct (Peter, 1981). In order to establish construct validity it is necessary to assess the unidimensionality of the items used to measure a given construct. A commonly used method for assessing unidimensionality is exploratory factor analysis. Factor analysis is a method of reducing a large number of measures to a smaller number, called factors, by discovering which measures go together or assess the similarity and the relationship among the clusters of measures that go together (Kerlinger and Lee, 2000). Principle component factor analysis using Varimax rotation is used to assess the variables in the study. Eigenvalues are used to assess if the factors are sufficient to explain the variance in the model. Dimensionality of each factor is assessed using factor loading. Items with a factor loading of greater than 0.50 are considered adequate indicators of the factors. Items with a factor loading of at least 0.30 on other factors were examined to determine whether they measure another factor (Hair, Anderson, Tatham, and Black, 1998).

Classical approaches include multitrait-multimethod (MTMM) technique (Campbell and Fiske, 1959) or principal components factor analysis (Straub, 1989), whereas the contemporary approaches include confirmatory factor analysis utilizing maximum likelihood extraction such as structural equation modeling (SEM). The use of SEM techniques for instrument validation and testing requires a large sample size. In this study, both principal components factor analysis and confirmatory factor analysis using Warp PLS is also used to test for validity of the instrument.

Construct validity requires both convergence and discriminality, where convergence refers to the ability of an instrument purporting to measure the same thing to be highly correlated, whereas discriminant validity refers to the ability of instruments that measure different to show low correlation (Kerlinger and Lee, 2000).

Convergent validity: Convergent validity is the extent to which a measure correlates highly with other measures used to measure the same construct (Churchill, 1979). In order

to demonstrate convergent validity, items measuring the same construct should be highly correlated with one another (Campbell andFiske, 1959).

Discriminant validity: Discriminant validity is concerned with the ability to differentiate between objects being measured (Campbell and Fiske, 1959). The test for discriminant validity is that an item should correlate more highly with other items intended to measure the same construct than with different items used to measure a different construct (Campbell and Fiske, 1959). In addition, the correlation among constructs should not be high. External validity defines representativeness or generalizability of a survey instrument (Kerlinger and Lee, 2000). It is the degree to which the findings from a single study can be generalized from the sample to the population.

To establish convergent and discriminant validity further, confirmatory factor analysis (CFA) was performed by using PLS (Tables 3.3). Convergent validity was established because all the items loaded strongly on their associated factors (loading > 0.50) and each of the factors loaded stronger on their associated factors rather than on any other factors (Table 3.3). Discriminant validity is established since the items loaded high on the respective constructs than on other constructs.

Tables 3.3: Factor Structure matrix of loadings and cross loadings

	OSE	**PF**	**JD**	**JR**	**JC**	**WM**
OSE1	**0.672**	0.356	0.213	0.449	0.294	0.287
OSE2	**0.639**	0.388	0.295	0.382	0.302	0.33
OSE3	**0.613**	0.392	0.271	0.355	0.311	0.407
OSE4	**0.67**	0.355	0.155	0.434	0.221	0.385
OSE5	**0.674**	0.417	0.142	0.354	0.215	0.418
OSE6	**0.63**	0.431	0.153	0.337	0.251	0.467
PF1	0.38	**0.709**	0.185	0.33	0.226	0.394
PF2	0.389	**0.69**	0.266	0.304	0.181	0.419
PF3	0.375	**0.643**	0.28	0.351	0.286	0.404
PF4	0.265	**0.595**	0.31	0.383	0.38	0.422
PF5	0.469	**0.58**	0.283	0.338	0.33	0.368
PF6	0.461	**0.682**	0.175	0.343	0.234	0.329
WP1	0.381	0.339	**0.554**	0.372	0.425	0.327

	OSE	PF	JD	JR	JC	WM
WP2	0.227	0.351	**0.594**	0.429	0.421	0.331
WP3	0.253	0.276	**0.795**	0.334	0.281	-0.068
WP4	0.269	0.435	**0.645**	0.457	0.273	0.159
CD1	0.35	0.535	**0.68**	0.407	0.368	0.243
CD2	0.391	0.47	**0.556**	0.332	0.362	0.136
CD3	0.267	0.229	**0.727**	0.361	0.397	0.193
CD4	0.289	0.143	**0.748**	0.314	0.437	0.201
ED1	0.296	0.292	**0.664**	0.26	0.46	0.313
ED2	0.288	0.323	**0.606**	0.314	0.463	0.361
ED3	0.309	0.3	**0.709**	0.303	0.397	0.244
ED4	0.158	0.284	**0.798**	0.238	0.384	0.223
ED5	0.103	0.235	**0.859**	0.224	0.318	0.202
ED6	0.233	0.321	**0.787**	0.198	0.369	0.212
RC1	0.317	0.289	**0.799**	0.221	0.297	0.186
RC2	0.215	0.255	**0.784**	0.308	0.391	0.16
RC3	0.22	0.286	**0.83**	0.273	0.29	0.144
RC4	0.218	0.233	**0.802**	0.298	0.341	0.22
HS1	0.216	0.237	**0.767**	0.31	0.353	0.227
HS2	0.152	0.211	**0.758**	0.379	0.399	0.217
HS3	0.133	0.26	**0.821**	0.289	0.284	0.205
HS4	0.139	0.279	**0.844**	0.332	0.27	0.087
HS5	0.09	0.185	**0.902**	0.257	0.273	0.05
AT1	0.306	0.269	0.438	**0.681**	0.201	0.292
AT2	0.441	0.337	0.367	**0.674**	0.093	0.251
AT3	0.416	0.423	0.229	**0.612**	0.233	0.27
SS1	0.331	0.399	0.419	**0.596**	0.268	0.276
SS2	0.248	0.422	0.411	**0.641**	0.275	0.273
SS3	0.319	0.325	0.311	**0.756**	0.186	0.199
FB1	0.337	0.247	0.253	**0.803**	0.199	0.269
FB2	0.416	0.333	0.203	**0.667**	0.307	0.33
FB3	0.375	0.325	0.259	**0.728**	0.216	0.327
OD1	0.331	0.295	0.276	**0.701**	0.311	0.362
OD2	0.363	0.357	0.255	**0.62**	0.377	0.378
OD3	0.422	0.317	0.11	**0.666**	0.331	0.372

	OSE	PF	JD	JR	JC	WM
CG1	0.407	0.379	0.251	**0.581**	0.317	0.43
CG2	0.387	0.368	0.262	**0.603**	0.335	0.377
CG3	0.513	0.331	0.246	**0.56**	0.312	0.369
CG4	0.386	0.329	0.233	**0.677**	0.305	0.354
CG5	0.535	0.334	0.112	**0.575**	0.284	0.378
TC1	0.346	0.379	0.396	0.341	**0.579**	0.322
TC2	0.187	0.176	0.559	0.285	**0.686**	0.264
TC3	0.293	0.317	0.374	0.38	**0.661**	0.272
TC4	0.307	0.282	0.475	0.266	**0.682**	0.242
TC5	0.232	0.315	0.359	0.321	**0.734**	0.276
TC6	0.353	0.318	0.19	0.234	**0.697**	0.399
TC7	0.312	0.241	0.373	0.274	**0.731**	0.194
CC1	0.22	0.254	0.313	0.285	**0.713**	0.409
CC2	0.295	0.279	0.288	0.274	**0.689**	0.41
CC3	0.224	0.292	0.418	0.189	**0.661**	0.447
CC4	0.214	0.255	0.245	0.384	**0.693**	0.403
CC5	0.299	0.252	0.254	0.31	**0.739**	0.358
RLC1	0.261	0.206	0.307	0.249	**0.801**	0.278
RLC2	0.369	0.257	0.199	0.349	**0.71**	0.294
RLC3	0.267	0.237	0.316	0.156	**0.82**	0.175
RLC4	0.261	0.336	0.43	0.246	**0.642**	0.31
RLC5	0.285	0.386	0.406	0.301	**0.652**	0.208
RLC6	0.315	0.323	0.381	0.293	**0.615**	0.406
RLC7	0.316	0.384	0.223	0.354	**0.644**	0.282
WM1	0.425	0.402	0.109	0.34	0.307	**0.659**
WM2	0.441	0.384	0.159	0.349	0.307	**0.639**
WM3	0.369	0.405	0.197	0.326	0.267	**0.689**
WM4	0.361	0.388	0.294	0.314	0.355	**0.629**
WM5	0.361	0.409	0.153	0.343	0.305	**0.681**

Discriminant validity was also be assessed by comparing the average variance extracted (AVE) values associated with each construct to the correlations among constructs (Staples, 1999). AVE represents the percentage of variance captured by a construct and is shown as the ratio of the sum of the captured variance to the measurement variance

(Gefen, Straub, and Boudreau, 2000). In order to claim discriminant validity, the square root of the AVE for each latent variable, given in the diagonals (Table 3.4) should be larger than any correlations of latent variables (Fornell and Larcker, 1981). The results show that the square root of the AVE (diagonal values) are larger than any correlations of the latent variables (all values above and the respective AVEs) thus suggesting evidence of discriminant validity.

Table 3.4: Discriminant Validity

Constructs	**OSE**	**PF**	**JD**	**JR**	**JC**	**WM**
Occupational Self-Efficacy (OSE)	**0.735**					
Job Performance (PF)	0.603	**0.725**				
Job Demands (JD)	0.314	0.39	**0.705**			
Job Resources (JR)	0.59	0.525	0.409	**0.733**		
Job Crafting (JC)	0.408	0.419	0.49	0.424	**0.712**	
Work Meaningfulness (WM)	0.596	0.603	0.28	0.508	0.468	**0.781**

Variance Inflation Factors

A variance inflation factor (VIF) is a measure of the degree of multicollinearity among the latent variables that are hypothesized to affect another latent variable (predictors). VIF were calculated for the predictor latent variables. Conservatively, VIF should be lower than 5 although a more relaxed criterion is that they should be lower than 10 (Hair et al., 1987; Kline, 1998). A higher VIF between two latent variables indicates that the two latent variables measure the same thing and hence the need to remove one of the latent variables from the model. Table 3.5 show VIF for the constructs. All values met the criterion thus suggesting that there are no latent variables that measure the same thing.

Table 3.5: Variance Inflation Factors

Construct	Full collinearity VIFs
Job Demands (JD)	1.558
Job Resources (JR)	1.890
Job Crafting (JC)	1.706
Work Meaningfulness (WM)	1.970
Occupational Self-Efficacy (OSE)	2.054
Job Performance (PF)	1.985

3.4.5 Criterion Validity

Criterion related validity is the degree to which a measurement instrument can predict a variable that is designated as a criterion. Coefficient of determination (R^2) is the percentage of the total variation in the dependent variable explained by the independent variables. In order to examine criterion validity, the coefficient of determination is analysed and tested whether it is greater than 25% (Heiman, 1998). Table 3.6 portrays the R^2 value of the constructs Occupational self-efficacy and Job Performance. Since the R^2 value of the constructs Occupational self-efficacy and Job Performance are greater than 25%, criterion validity is ensured. To ensure criterion validity Warp PLS software is used.

Table 3.6: Criterion validity of the constructs

Construct	R^2 value
Occupational Self-efficacy	0.38
Job Performance	0.41

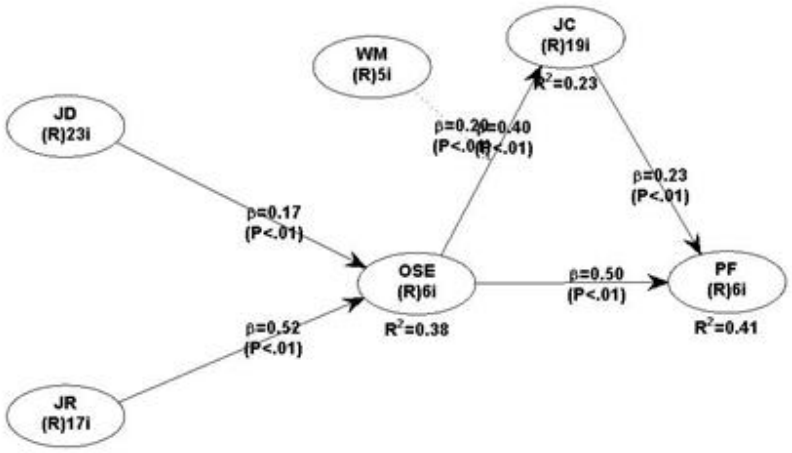

Figure 3.1: Criterion validity of the Constructs

3.5 Sampling and Target Population

According to Malhotra and Birks (2003) researchers should define the target population in terms of elements, sampling units, extent and time. An element is an object from which information is desired. The element is usually the respondent in survey strategy. A sampling unit is a unit that contains the element that is available for selection at some stage of the sampling process. Extent refers to the geographical boundaries of the research and time refers to the period under consideration.

The purpose of this study is to examine the influence of Job Demands, Job Resources on Occupational Self-Efficacy; Occupational Self-Efficacy on Job Performance of the employees and the influence of Occupational Self-Efficacy, Work Meaningfulness and Job Crafting on Job Performance among the employees working in engineering industries.

Sampling Technique

There are two types of sampling technique namely probability sampling and non-probability sampling. For probability sampling, each of the element in the target population has an equal probability of being chosen as the sample for the survey conducted. Probability sampling is scientific, operationally convenient and simple in theory, and the results obtained from this method are more generalizable toward the target population. For non-probability sampling, each of the elements in the sampling frame does not have an

equal chance to be chosen as the sample. Admittedly this method is simpler and convenient to operate however the results obtained cannot be confidently generalised to the population.

Sample Size

A population is defined as the "total collection of individuals or objects" whereas the sample is "a selected part or a subset of the population (Pretorius 1995). According to Pretorius (1995), research is generally conducted to make inferences about the population based on the information available about the sample, in order to make inferences from the sample to the population. A number of formulae have been formulated for determining the sample size. The researcher has used the below mentioned formulae for calculation of sample size for known population. Mugenda and Mugenda (2003) further recommend the use of Fishers formula for sample size determination. Since the population is huge and it could have changed at the time of the study, the researcher used Fishers formula for calculating the sample size of an infinite population.

Table 3.7: Criteria for selecting sample size

Accuracy (+/-) (Margin of error)	Confidence level 90%	Confidence level 95%	Confidence level 99%
1	6756	9604	16576
2	1691	2401	4144
3	752	1067	1848
4	413	600	1036
5	271	384	663
10	68	96	166
20	17	24	41

$n = p(1-p)(z/d)^2$

$384 = 0.5(0.5)*(1.96/0.05)^2$

Where: n = sample size

z= the table value for the level of confidence, for instance 95% level of confidence =1.96, 90% level of confidence =1.645.

d= margin of error

p= proportion to be estimated, Cochran (1963) and Mugenda and Mugenda (2003) recommends that if you don't know the value of p then you should assume p=0.5

Coimbatore has a cluster of engineering industries as discussed in Chapter 1 and is viewed as a hub hosting engineering industries in South India. Therefore the study identifies the companies that are atleast 15 years old, has a minimum of 500 employees working with them and registered with the Southern India Engineering Manufacturers Association (SIEMA) within the boundaries of Coimbatore District. The research adopted convenience sampling for the selection of organizations. Convenience sampling or purposive sampling is a non probabilistic sampling technique which implore data from those respondents who are easily available and ready to participate on their will. 15 organizations were contacted to collect data, of which 8 organizations permitted to collect data from their employees. The respondents for the research comprise the employees occupying the Technical (diploma holders and shop floor employees) and Managerial level (supervisors and managers) employees in the organizations. Data was collected through a questionnaire. From each organization 10% of the employees were selected at random and the questionnaire was distributed to them. Sufficient time was given to fill the questionnaire. The organizations are coded as A, B, C, D, E, F, G and H for the convenience of analysis. The numbers of respondents included in this research from these organizations and the response rate are:

Organization code	**No of questionnaires distributed**	**No of questionnaires returned**	**No of incomplete questionnaires**	**Response Rate (%)**
A	78	65	13	83.33
B	62	51	11	82.26
C	53	46	7	86.79
D	56	44	12	78.57
E	63	47	16	74.60
F	57	53	4	92.98
G	62	49	13	79.03
H	68	59	9	86.76
Total	499	414	85	82.97

The total number of respondents included for the study were 499 respondents of which 414 valid responses were received and the response rate is 82.97%.

3.6 Data Collection

According to Bernard (2002) data collection is crucial in research, as the data is meant to contribute to a better understanding of a theoretical framework. Both primary and secondary data is collected for the study. Data was collected during January to July 2017. The respondents are contacted in person and the importance of the study is explained to them before administering the questionnaire. Sufficient time is given to the respondents for filling up the questionnaire. While collecting the questionnaires back it is ensured that all the questions are answered and no question is left unanswered. The entire data is consolidated and used for analysis. Secondary data is collected from journals, books, newspapers, survey reports, authorized websites and business magazines.

3.7 Tools for Analysis

The collected data is analyzed using the following tools and techniques in line with the objectives of the study.

Percentage analysis: The percentage analysis is used to express the percentage of respondents falling under each category. It describes the total frequency of respondents/responses in percentage format. Percentage analysis is used to portray the demographic profile of the respondents.

Descriptive statistics: Descriptive statistics is carried out to examine the perceived level of importance of the dimensions of Job Demands, Job Resources, Occupational Self-Efficacy, Work Meaningfulness, Job Crafting and Job Performance among the respondents.

Correlation Analysis: Correlation analysis reveals the degree and type of relationship between any two or more quantities (variables). The resulting value called the “correlation co-efficient” shows the extent to which changes in one item will result in changes in other item. In this study it is used to measure the relationship between the Job Demands, Job Resources and Occupational Self-Efficacy; Job Demands, Job Resources, Occupational Self-Efficacy and Job Performance.

Regression Analysis: Regression analysis is a technique for modelling and analysis of several variables, when the focus is on the relationship between a dependent variable and one or more independent variables. More specifically, regression analysis helps to understand how the typical value of the dependent variable changes when any one of the independent variable is varied, while the other independent variables are held fixed.

This study uses regression analysis to study the influence of

- The independent variable Job Demands, Job Resources on the dependent variable Occupational Self-Efficacy
- The independent variable Occupational Self-Efficacy on the dependent variable Job Performance

Path Modeling: The hypotheses are tested using Structural Equation Modelling (SEM) technique. SEM enables researchers to answer a set of interrelated research questions in a single, systematic and comprehensive analysis by modelling the relationship between multiple and dependent constructs simultaneously. SEM assesses the structural model, the assumed causation among a set of dependent and independent constructs and evaluates the measurement model loading of observed items (measurements) on their expected latent (constructs). The result is hence a more rigorous analysis of the proposed research model and Gefen et al. (2000) views it as a better methodological assessment tool. Hence, this study uses Warp PLS software to perform the analysis. Path modelling is performed to examine the mediating role of Job Crafting on the relationship between Occupational Self-Efficacy and Job Performance and the moderating effect of Occupational Self-Efficacy on the relationship between Work Meaningfulness and Job Crafting.

Discriminant analysis: Discriminant function analysis is a statistical analysis to predict a categorical dependent variable (called a grouping variable) by one or more continuous or binary independent variables (called predictor variables). It is mainly used to determine which variables discriminate between two or more naturally occurring groups. This study uses discriminant analysis to identify the factors that discriminate employees with high performance from those with low performance.

ANOVA: The analysis of variance is a powerful and common statistical procedure in the social sciences. ANOVA is used to test the significant differences in the mean values of more than two groups. It is used to test the significance difference in the perception of respondents of varied demographic profile with respect to the study variables, namely Job Demands, Job Resources, Occupational Self Efficacy, Job Crafting, Work Meaningfulness and Job Performance among the employees.

3.8 Concluding Remarks

The research study is descriptive in nature and adopts survey strategy. Content validity, Reliability of the constructs, Construct and Criterion validity for each constructs is performed. The sampling frame constitutes the Engineering Industries in Coimbatore district. The research adopts convenience sampling to include organization for the study and random sampling for the inclusion of respondents. The tools and techniques used for the analysis are discussed. The following chapter presents the results of the data analysis.