CHAPTER III - RESEARCH METHODOLOGY

Research methods refer to the methods the researchers use in performing research operations. It includes those methods which are concerned with the collection of data, which are used for establishing relationship between the variables and those methods which are used to evaluate the accuracy of the results obtained (Kothari, 2004).

This section outlines the objectives of this research followed by the research hypotheses. It then gives an account of the methodology adopted, sampling procedure encompassing the profile of the organizations from where the data was collected, data collection method and the sample size. Detail description of the pilot study and the changes made based on the same is then reported. Finally the methods to be used in statistical analysis of data are discussed.

3.1. Objectives

- To examine the effect of psychological contract breach on work attitudes & behaviours
- To examine the role of engagement as a mediator in the relationship between psychological contract breach and work attitudes & behaviours
- To examine the role of psychological capital as a moderator in the relationship between psychological contract breach and work attitudes & behaviours
- To examine the role of psychological capital as a moderator in the mediated relationship between psychological contract breach and work attitudes & behaviours through engagement.
3.2. **Research Hypotheses**

Based on the objectives four hypotheses are formulated. To facilitate statistical testing the hypotheses are further considered as sub hypotheses and presented below.

**H1:** Psychological contract breach will have a significant effect on work attitudes and behaviours

H1.1: Psychological contract breach (composite measure) will have a significant effect on work attitudes and behaviours

H1.1.1: Breach (composite measure) will have a significant negative effect on engagement

- Breach of organizational rewards will have significant negative effect on engagement (H1.1.1.a);
- Breach of organizational benefits will have significant negative effect on engagement (H1.1.1.b);
- Breach of autonomy & control will have significant negative effect on engagement (H1.1.1.c);
- Breach of growth & development will have significant negative effect on engagement (H1.1.1.d)

H1.1.2: Breach (composite measure) will have a significant negative effect on job satisfaction

- Breach of organizational rewards will have significant negative effect on job satisfaction (H1.1.2.a);
- Breach of organizational benefits will have significant negative effect on job satisfaction (H1.1.2.b);
- Breach of autonomy & control will have significant negative effect on job satisfaction (H1.1.2.c);
- Breach of growth & development will have significant negative effect on job satisfaction (H1.1.2.d)

H1.1.3: Breach (composite measure) will have a significant negative effect on affective commitment

- Breach of organizational rewards will have significant negative effect on affective commitment (H1.1.3.a);
- Breach of organizational benefits will have significant negative effect on affective commitment (H1.1.3.b);
- Breach of autonomy & control will have significant negative effect on affective commitment (H1.1.3.c);
- Breach of growth & development will have significant negative effect on affective commitment (H1.1.3.d)
control will have significant negative effect on affective commitment (H1.1.3.c); Breach of growth & development will have significant negative effect on affective commitment (H1.1.3.d)

H1.1.4: Breach (composite measure) will have a significant negative effect on OCB

Breach of organizational rewards will have significant negative effect on OCB (H1.1.4.a); Breach of organizational benefits will have significant negative effect on OCB (H1.1.4.b); Breach of autonomy & control will have significant negative effect on OCB (H1.1.4.c); Breach of growth & development will have significant negative effect on OCB (H1.1.4.d)

H1.1.5: Breach (composite measure) will have a significant positive effect on deviance

Breach of organizational rewards will have significant negative effect on deviance (H1.1.5.a); Breach of organizational benefits will have significant negative effect on deviance (H1.1.5.b); Breach of autonomy & control will have significant negative effect on deviance (H1.1.5.c); Breach of growth and development will have significant negative effect on deviance (H1.1.5.d)

H1.2: Psychological contract breach (global measure) will have a significant effect on work attitudes and behaviours

Global Measure of Breach will have a significant negative effect on engagement (H1.2.1); on job satisfaction (H1.2.2); on affective commitment (H1.2.3); on OCB (H1.2.4); positive effect on deviance (H1.2.5)

H2: Engagement will mediate the relationship between psychological contract breach and work attitudes and behaviours

H2.1: Engagement will mediate the relationship between psychological contract breach (composite measure) and job satisfaction

Engagement will mediate the relationship between breach of organizational rewards and satisfaction (H2.1.1); breach of organizational benefits and
satisfaction (H2.1.2); breach of autonomy & control and satisfaction (H2.1.3); breach of growth & development and satisfaction (H2.1.4)

H2.2: Engagement will mediate the relationship between psychological contract breach (composite measure) and affective commitment

Engagement will mediate the relationship between breach of organizational rewards and affective commitment (H2.2.1); breach of organizational benefits and affective commitment (H2.2.2); breach of autonomy & control and affective commitment (H2.2.3); breach of growth & development and affective commitment (H2.2.4)

H2.3: Engagement will mediate the relationship between psychological contract breach (composite measure) and OCB

Engagement will mediate the relationship between breach of organizational rewards and OCB (H2.3.1); breach of organizational benefits and OCB (H2.3.2); breach of autonomy & control and OCB (H2.3.3); breach of growth & development and OCB (H2.3.4)

H2.4: Engagement will mediate the relationship between psychological contract breach (composite measure) and deviance

Engagement will mediate the relationship between breach of organizational rewards and deviance (H2.4.1); breach of organizational benefits and deviance (H2.4.2); breach of autonomy & control and deviance (H2.4.3); breach of growth & development and deviance (H2.4.4)

H2.5: Engagement will mediate the relationship between psychological contract breach (global measure) and work attitudes and behaviours

Engagement will mediate the relationship between global measure of breach and job satisfaction (H2.5.1), affective commitment (H2.5.2), OCB (H2.5.3), and deviance (H2.5.4).

H3: Psychological capital will moderate the relationship between psychological contract breach and engagement

H3.1: Psychological capital will moderate the relationship psychological contract breach (composite measure) and engagement

H3.1.1: Hope will moderate the relationship between psychological contract breach (composite measure) and engagement
Hope will moderate the relationship between breach of organizational rewards and engagement (H3.1.1.a); breach of organizational benefit and engagement (H3.1.1.b); breach of autonomy & control and engagement (H3.1.1.c) and breach of growth & development and engagement (H3.1.1.d)

H3.1.2: Optimism will moderate the relationship between psychological contract breach (composite measure) and engagement

Optimism will moderate the relationship between breach of organizational rewards and engagement (H3.1.2.a); breach of organizational benefit and engagement (H3.1.2.b); breach of autonomy & control and engagement (H3.1.2.c) and breach of growth & development and engagement (H3.1.2.d)

H3.1.3: Resilience will moderate the relationship between psychological contract breach (composite measure) and engagement

Resilience will moderate the relationship between breach of organizational rewards and engagement (H3.1.3.a); breach of organizational benefit and engagement (H3.1.3.b); breach of autonomy & control and engagement (H3.1.3.c) and breach of growth & development and engagement (H3.1.3.d)

H3.1.4: Self-efficacy will moderate the relationship between psychological contract breach (composite measure) and engagement

Self-efficacy will moderate the relationship between breach of organizational rewards and engagement (H3.1.4.a); breach of organizational benefit and engagement (H3.1.4.b); breach of autonomy & control and engagement (H3.1.4.c) and breach of growth & development and engagement (H3.1.4.d)

H3.2: Psychological capital will moderate the relationship between psychological contract breach (global measure) and engagement

Hope will moderate the relationship between global measure of breach and engagement (H3.2.1); Optimism will moderate the relationship between global measure of breach and engagement (H3.2.2); Resilience will moderate the relationship between global measure of breach and engagement (H3.2.3).
engagement (H3.2.3); Self-efficacy will moderate the relationship between global measure of breach and engagement (H3.2.4)

**H4:** Psychological capital will moderate the strength of the mediated relationship between psychological contract breach and outcomes through engagement such that the strength of the mediated relationship will be stronger under lower psychological capital than under higher psychological capital

**H4.1:** Psycap will moderate the strength of the mediated relationship between psychological contract breach (composite measure) and job satisfaction through engagement, such that the strength of the mediated relationship will be stronger under lower psychological capital than under higher psychological capital

**H4.1.1:** Hope will moderate the strength of the mediated relationship between breach (composite measure) and job satisfaction through engagement

Hope will moderate the strength of the mediated relationship between breach of organizational reward and satisfaction (H4.1.1.a), breach of organizational benefit and satisfaction (H4.1.1.b), breach of autonomy & control and satisfaction (H4.1.1.c), breach of growth & development and satisfaction (H4.1.1.d) through engagement

**H4.1.2:** Optimism will moderate the strength of the mediated relationship between breach (composite measure) and job satisfaction through engagement

Optimism will moderate the strength of the mediated relationship between breach of organizational reward and satisfaction (H4.1.2.a), breach of organizational benefit and satisfaction (H4.1.2.b), breach of autonomy & control and satisfaction (H4.1.2.c), breach of growth & development and satisfaction (H4.1.2.d) through engagement

**H4.1.3:** Resilience will moderate the strength of the mediated relationship between breach (composite measure) and job satisfaction through engagement
Resilience will moderate the strength of the mediated relationship between breach of organizational reward and satisfaction (H4.1.3.a), breach of organizational benefit and satisfaction (H4.1.3.b), breach of autonomy & control and satisfaction (H4.1.3.c), breach of growth & development and satisfaction (H4.1.3.d) through engagement.

H4.1.4: Self-efficacy will moderate the strength of the mediated relationship between breach (composite measure) and job satisfaction through engagement.

Self-efficacy will moderate the strength of the mediated relationship between breach of organizational reward and satisfaction (H4.1.4.a), breach of organizational benefit and satisfaction (H4.1.4.b), breach of autonomy & control and satisfaction (H4.1.4.c), breach of growth & development and satisfaction (H4.1.4.d) through engagement.

H4.2: Psychological capital will moderate the strength of the mediated relationship between psychological contract breach (composite measure) and affective commitment through engagement, such that the strength of the mediated relationship will be stronger under lower psychological capital than under higher psychological capital.

H4.2.1: Hope will moderate the strength of the mediated relationship between breach (composite measure) and affective commitment through engagement.

Hope will moderate the strength of the mediated relationship between breach of organizational reward and affective commitment (H4.2.1.a), breach of organizational benefit and affective commitment (H4.2.1.b), breach of autonomy & control and affective commitment (H4.2.1.c), breach of growth & development and affective commitment (H4.2.1.d) through engagement.

H4.2.2: Optimism will moderate the strength of the mediated relationship between breach (composite measure) and affective commitment through engagement.
Optimism will moderate the strength of the mediated relationship between breach of organizational reward and affective commitment (H4.2.2.a), breach of organizational benefit and affective commitment (H4.2.2.b), breach of autonomy & control and affective commitment (H4.2.2.c), breach of growth & development and affective commitment (H4.2.2.d) through engagement

H4.2.3: Resilience will moderate the strength of the mediated relationship between breach (composite measure) and affective commitment through engagement

Resilience will moderate the strength of the mediated relationship between breach of organizational reward and affective commitment (H4.2.3.a), breach of organizational benefit and affective commitment (H4.2.3.b), breach of autonomy & control and affective commitment (H4.2.3.c), breach of growth & development and affective commitment (H4.2.3.d) through engagement

H4.2.4: Self-efficacy will moderate the strength of the mediated relationship between breach (composite measure) and affective commitment through engagement

Self-efficacy will moderate the strength of the mediated relationship between breach of organizational reward and affective commitment (H4.2.4.a), breach of organizational benefit and affective commitment (H4.2.4.b), breach of autonomy & control and affective commitment (H4.2.4.c), breach of growth & development and affective commitment (H4.2.4.d) through engagement

H4.3: Psychological capital will moderate the strength of the mediated relationship between psychological contract breach (composite measure) and OCB through engagement, such that the strength of the mediated relationship will be stronger under lower psychological capital than under higher psychological capital
H4.3.1: Hope will moderate the strength of the mediated relationship between breach (composite measure) and OCB through engagement

Hope will moderate the strength of the mediated relationship between breach of organizational reward and OCB (H4.3.1.a), breach of organizational benefit and OCB (H4.3.1.b), breach of autonomy & control and OCB (H4.3.1.c), breach of growth & development and OCB (H4.3.1.d) through engagement

H4.3.2: Optimism will moderate the strength of the mediated relationship between breach (composite measure) and OCB through engagement

Optimism will moderate the strength of the mediated relationship between breach of organizational reward and OCB (H4.3.2.a), breach of organizational benefit and OCB (H4.3.2.b), breach of autonomy & control and OCB (H4.3.2.c), breach of growth & development and OCB (H4.3.2.d) through engagement

H4.3.3: Resilience will moderate the strength of the mediated relationship between breach (composite measure) and OCB through engagement

Resilience will moderate the strength of the mediated relationship between breach of organizational reward and OCB (H4.3.3.a), breach of organizational benefit and OCB (H4.3.3.b), breach of autonomy & control and OCB (H4.3.3.c), breach of growth & development and OCB (H4.3.3.d) through engagement

H4.3.4: Self-efficacy will moderate the strength of the mediated relationship between breach (composite measure) and OCB through engagement

Self-efficacy will moderate the strength of the mediated relationship between breach of organizational reward and OCB (H4.3.4.a), breach of organizational benefit and OCB (H4.3.4.b), breach of autonomy & control and OCB (H4.3.4.c),
breach of growth & development and OCB (H4.3.4.d) through engagement

H4.4: Psychological capital will moderate the strength of the mediated relationship between psychological contract breach (composite measure) and deviance through engagement, such that the strength of the mediated relationship will be stronger under lower psychological capital than under higher psychological capital

H4.4.1: Hope will moderate the strength of the mediated relationship between breach (composite measure) and deviance through engagement

Hope will moderate the strength of the mediated relationship between breach of organizational reward and deviance (H4.4.1.a), breach of organizational benefit and deviance (H4.4.1.b), breach of autonomy & control and deviance (H4.4.1.c), breach of growth & development and deviance (H4.4.1.d) through engagement

H4.4.2: Optimism will moderate the strength of the mediated relationship between breach (composite measure) and deviance through engagement

Optimism will moderate the strength of the mediated relationship between breach of organizational reward and deviance (H4.4.2.a), breach of organizational benefit and deviance (H4.4.2.b), breach of autonomy & control and deviance (H4.4.2.c), breach of growth & development and deviance (H4.4.2.d) through engagement

H4.4.3: Resilience will moderate the strength of the mediated relationship between breach (composite measure) and deviance through engagement

Resilience will moderate the strength of the mediated relationship between breach of organizational reward and deviance (H4.4.3.a), breach of organizational benefit and deviance (H4.4.3.b), breach of autonomy & control and deviance (H4.4.3.c), breach of growth & development and deviance (H4.4.3.d) through engagement
H4.4.4: Self-efficacy will moderate the strength of the mediated relationship between breach (composite measure) and deviance through engagement

Self-efficacy will moderate the strength of the mediated relationship between breach of organizational reward and deviance (H4.4.4.a), breach of organizational benefit and deviance (H4.4.4.b), breach of autonomy & control and deviance (H4.4.4.c), breach of growth & development and deviance (H4.4.4.d) through engagement

H4.5: Psychological capital will moderate the strength of the mediated relationship between psychological contract breach (global measure) and outcomes through engagement, such that the strength of the mediated relationship will be stronger under lower psychological capital than under higher psychological capital

H4.5.1: Psychological capital will moderate the strength of the mediated relationship between breach (global measure) and job satisfaction through engagement, such that the mediated relationship will be stronger under lower psychological capital than under higher psychological capital

H4.5.2: Psychological capital will moderate the strength of the mediated relationship between breach (global measure) and affective commitment through engagement, such that the mediated relationship will be stronger under lower psychological capital than under higher psychological capital

H4.5.3: Psychological capital will moderate the strength of the mediated relationship between breach (global measure) and OCB through engagement, such that the mediated relationship will be stronger under lower psychological capital than under higher psychological capital

H4.5.4: Psychological capital will moderate the strength of the mediated relationship between breach (global measure) and deviance through engagement, such that the mediated relationship will be
stronger under lower psychological capital than under higher psychological capital

3.3. Methodology

This research has adopted cross-sectional design and survey methodology. The idea is to examine if the impact of psychological contract breach on work outcomes and the role of engagement and psychological capital in this relationship, would be valid in both manufacturing and service sectors.

Sample size had to be determined, before the actual data collection. The following section outlines the same.

3.3.1. Determination of Sample Size

There are several methods to calculate the sample size in a research. One of the most widely used methods for sample size calculation is given below,

\[ N = \left( \frac{z^2 \times p \times q}{S.E} \right)^2 \]  

(3.1)

Where \( z \) represents the \( z \) value for the corresponding confidence interval

\( p \) represents probability of the respondent perceiving psychological contract breach

\( q \) represents probability of the respondent not perceiving psychological contract breach (\( q = 1-p \))

**SE** is the desired margin of error

In this research, 95% confidence interval is preferred. The corresponding \( z \) value for that confidence interval is 1.96. When the probability of occurrence of an event is unknown it is assumed to be 0.5. This is a conservative assumption where we have assumed that the chances of the respondent perceiving psychological contract
breach at work, as 50%. And the margin of error is to be limited to \( \pm 5 \) percent of the true value, then the sample size is calculated as,

\[
\text{Sample Size} = \frac{(1.96 \times 1.96 \times 0.5 \times 0.5)}{(0.05 \times 0.05)}
\]

\[
= 384.16
\]

Hence the desired sample size has to be at least 385 for this research.

3.3.2. Sampling

Due to logistic reasons, data was collected from organizations only in Chennai and Coimbatore. Chennai popularly known as the Detroit of Asia, accounts for thirty percent of India’s automobile industry and forty percent of auto components industry. (Automotiveproductsfinder.com, December, 2012). Chennai is the second largest exporter of IT and IT Enabled Services (ITES) of India (Wikipedia, September, 2014) while Coimbatore is the second largest software producer in Tamilnadu, next only to Chennai (Coimbatore.nic.in). Hence, in the manufacturing sector, auto component industry and in service sector, IT industry were narrowed down. Once the auto component manufacturing sector was chosen, ACMA (Automotive Components Manufacturing Association of India) was approached to obtain the list of automotive components manufacturing companies in India, specifically in Chennai. ACMA is the apex body representing the interest of the Indian auto component industry and represents over seven hundred companies that contributes more than 85% of the total auto component output in the organized sector. Organizations in Chennai with a turnover of USD 100 Million that supplied their parts to various companies, were narrowed down. There were only seven organizations that met this criteria. Hence they were all approached for providing data for this study. As psychological contract breach is a sensitive topic, it was very difficult to get permission for data collection from organizations. Only two organizations in auto component manufacturing sector lent their permission. As data from these companies were not sufficient in terms of
numbers, multi-national companies in Chennai manufacturing automotive component parts were also approached, out of which one offered permission for data collection.

In service sector, IT and ITES were narrowed down, as stated earlier. NASSCOM was approached for a list of companies in Chennai that offered the above mentioned service. Out of the list, ten companies from Chennai were chosen randomly. Top companies in this list refused to offer permission to collect data, either stating that they have their own research team for this purpose, or they have hired external organizations to conduct research on their employee attitudes and behaviours. Only three companies in this sector were willing to provide data. Again, as data from these companies were not enough in terms of numbers, amongst a list of companies in IT and ITES sector in Coimbatore, five were chosen randomly and approached, out of which one lent their support for data collection.

Within each organization, purposive sampling, a non-probability sampling technique was adopted wherein only those in the supervisory cadre and above were chosen for the study. This is because, those below the supervisory cadre were not in a position to understand the items, especially in the manufacturing sector. A self-administered questionnaire was used as a data collection instrument. Structured and validated scales were used for the study. The respondents were assured of their anonymity. Five hundred and sixty questionnaires were distributed, out of which four hundred and forty seven questionnaires were returned, with a response rate of approximately eighty percent. Out of these, two hundred and thirty were from manufacturing sector and two hundred and seventeen were from service sector. Six incomplete questionnaires were excluded, making the total sample size to four hundred and forty one. This exceeds the minimum required sample size of three hundred and eighty five. Because of the sample exceeding the minimum required number, the margin of error now stands at 4.6 percent, as against the assumed 5 percent. Hence the accuracy of the results would be greater.
3.3.3. Profile of the Organizations.

Out of these three organizations, one of them is privately owned, the other is a joint venture between an Indian and US based organization and the third is a multi-national organization. The privately owned organization has an annual turnover of three thousand crores (2012-2013) with five thousand employees working in different facilities across the country. It is one of the leading manufacturers of automotive parts in India. The joint venture organization has an annual turnover of one thousand crores (2012-2013) with an employee count of thousand five hundred. The multi-national organization is involved in the manufacture of automotive parts and has various operating groups manufacturing different automotive parts at different parts of the world. The facility in Chennai is involved in the manufacture of closure systems and modules for automotive industry. Hence out of the total headcount of 1 lakh employees across the globe, approximately seven hundred work in this facility. Their net operating income globally stands at eleven thousand crores (2012) approximately. Hence organizations ranging from joint venture to multinational, to privately owned are covered in this research.

Out of the four service sector organizations involved in IT, one of them is a leading software company focused on consulting, products and managed service business. Their income stands at sixty crores (Q2: 2012-2013) and has an employee count of one thousand eight hundred. The second organization is in global payment systems providing electronic payment and financial transaction processing solutions and services. It has an annual turnover of hundred crores and has approximately thousand employees. The third organization provides services and solutions in the areas of information technology and business process outsourcing to the travel and transportation domains. It has two thousand employees globally and has a revenue of two hundred crores approximately (2008). The fourth organization is based in Coimbatore and is focused in the areas of software development, training and
consulting. Their annual turnover stands at one crore and has an employee count of hundred. It is a relatively smaller company compared to the other software organizations. Hence adequate representation in terms of size of the company, operating domains and services were ensured.

3.4. Measures

3.4.1. Psychological Contract Breach.

Psychological Contract Breach was measured using the scale developed by Kickul and Lester (2001). It measures the extent of fulfillment of intrinsic and extrinsic promises. Intrinsic promise items measures the extent to which the employee perceives that their obligations regarding autonomy & control and growth & development are fulfilled. Extrinsic promise items on the other hand measures the extent of fulfillment of promises made in the organizational reward and organizational benefits context. The scale contains 19 items, with seven items measuring autonomy and control and four items each for rest of factors. Five point rating scale was used with 1 representing “Not at all fulfilled” and 5 representing “Very fulfilled”. The responses were then reverse scored to measure breach of psychological contract.

3.4.2. Global Measure of Breach.

Psychological contract breach was also measured by five item scale developed by Robinson and Morrison (2000). The earlier measure of breach is called the composite measure, where various content items of the psychological contract (e.g., competitive salary, training and guidance) are specified and the respondents are required to specify their level of fulfillment with respect to those items. Global measure of breach, does not refer to any specific content item but directly assesses respondents’ overall perception of how much the organization has fulfilled or failed to fulfill its obligations (Zhao et al, 2007). Sample item includes “I have not received everything promised to me in exchange for my contributions”. Out of the five items,
three items are reverse scored. Since it measures breach directly, items that are positively worded are actually the reverse scored items. The responses range from 1 (Strongly Disagree) to 6 (Strongly Agree).

3.4.3. Psychological Capital.

Psychological capital was measured using PCQ-24, a measure developed by Luthans, Youssef & Avolio (2007). Each of the four components of PsyCap, hope, optimism, resiliency and self-efficacy is measured by six items. Hence the scale contains a total of 24 items. Six point rating scale is used with responses ranging from 1 (Strongly Disagree) to 6 (Strongly Agree). This scale contains three reverse scored items, one item that measures resiliency and two items that measure optimism.

3.4.4. Engagement.

Work Engagement was measured using UWES-9 (Utrecht Work Engagement Scale -9) developed by Schaufeli & Bakker (2003). The scale contains nine items and the responses for these items were to range from 0 (never) to 6 (always), indicating how often the respondents felt that way.

3.4.5. Job Satisfaction.

Job satisfaction was measured using Michigan Organizational Assessment Questionnaire Job Satisfaction Subscale (Cammann, Fichman, Jenkins, & Klesh, 1979). The scale contains 3 items to measure job satisfaction out of which one is reverse scored. Five point rating scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree) was used.

3.4.6. Affective commitment.

Affective commitment was measured using Allen and Meyer (1990) scale as adapted by Smeenk, Eisinga, Teelken & Doorewaard (2006) in their study. Out of eight items measuring affective commitment, the adapted scale uses only six items to
measure the same, two of which are reverse scored. Responses ranged from 1 (Strongly Disagree) to 5 (Strongly Agree).

3.4.7. **Organizational Citizenship Behaviour.**

Organizational Citizenship Behaviour was measured using Lee and Allen (2002) scale, as adapted by Saks (2006). It contains eight items and the responses for these items were measured using seven point Likert scale with responses ranging from 1 (Never) to 7 (Always).

3.4.8. **Workplace Deviance.**

Workplace Deviance was measured by a scale developed by Bennett and Robinson (2000). This scale as adapted by De Lara, Verano-Tacoronte (2007) in which items regarding ethnic, religious and racial differences were omitted, was used in this study. This adapted version contains nine items which measures how often the respondent indulges in deviant behaviour. This scale uses seven point Likert scale with responses ranging from 1 (Never) to 7 (Always).

3.5. **Pilot study**

For the purpose of validating the questionnaire, pilot study was done. Data was collected from forty working professionals irrespective of the sector they were in.

Reliability of the measures were calculated. Though the reliability of global measure of breach, psychological capital, job satisfaction and affective commitment were less due to the presence of reverse scored items in those scales, those items were retained, to see if the reliability improves in the main study due to a bigger sample size.

In the questionnaire, items were segregated such that the items measuring a particular variable belonged to a segment. It was found that, due to this, respondents rated the items without actually reading it owing to predictability. Hence based on the pilot study, items were rearranged. That is job satisfaction items were interspersed with affective commitment items. Similarly each item in engagement was alternated with an item of OCB. This was done to avoid predictability and to ensure that respondents read each item before responding to them.
Due to the unique nature of the psychological contract measure, where the respondents had to choose only those promises made to them by the employer and provide the extent of fulfilment only for those chosen, respondents expressed their difficulty in understanding the instructions as they were long and winding. Hence the instructions were suitably reworded and made short and precise.

### 3.6. Plan of Analyses

Measures need to be valuable and reliable. Reliability is to be checked with Cronbach’s Alpha. In addition, the measurement model of the constructs is to be validated with Confirmatory Factor Analysis (CFA) using Amos 21.

The motive of this research is to examine the impact of psychological contract breach on employee’s work attitudes and behaviour and the role of engagement and psychological capital in this relationship. Hypothesis H1 deals with the total effect of psychological contract breach on outcomes. To analyse this effect, hierarchical regression analysis is to be conducted in SPSS 20. Hypotheses H2 deals with the proposition that psychological contract breach will have a significant effect on work attitudes and behaviour, through engagement. That is, engagement would mediate the relationship between psychological contract breach and work outcomes. This mediation through engagement is proposed to be tested using PROCESS macro by Hayes (2013). The macro in addition to estimating the unstandardized beta coefficients based on Baron & Kenny’s (1986) causal steps strategy also lists the strength and significance of the indirect effect directly. Confidence intervals obtained through bootstrapping in these macros, enables to validate the significance of the indirect effect.

Psychological capital has been proposed to moderate the relationship between psychological contract breach and work attitudes and behaviours. Hypotheses H3 proposes this relationship. It is to be tested again using PROCESS macro by Hayes (2013). In addition to testing the significance of the interactive effect, it also estimates the conditional effect of X (the independent variable) on Y (the dependent variable) at the sample mean of the moderator as well as at one standard deviation above and
below the sample mean of the moderator. Hence, one can validate if the effect of independent variable on the dependent, varies across the values of the moderator variable.

Psychological capital has been proposed to moderate the indirect effect of psychological contract breach on work outcomes through engagement. H4 deals with the moderation of the indirect effect of breach on outcomes through engagement by psychological capital. This is to be tested again using PROCESS macro by Hayes (2013). PROCESS can generate direct and indirect effects in mediation, conditional effects in moderation models and conditional indirect effects in moderated mediation. Hence in addition to testing the interaction effect of breach and psychological capital on the mediator engagement, macro would also generate conditional indirect effect of breach on outcomes through engagement, at the sample mean and at one standard deviation above and below the mean, of the moderator. The significance of the conditional indirect effect can be validated using the bootstrap confidence intervals generated with it.

The above mentioned relationships are to be tested both for individual dimensions of breach and for breach as an overall measure. This is done to assess the relative impact of different types of breach on work outcomes and also the overall impact of breach. Also the moderating effect of psychological capital is to be tested for each individual dimensions of psychological capital and for PsyCap as a whole. This is again done to assess relative effectiveness of PsyCap dimensions in tackling breach. Since most of the analysis is to be done using macros, the relationships are to be further validated using SEM analyses using Amos 21.