CHAPTER 3: RESEARCH METHODOLOGY

3.1 Introduction

This chapter provides empirical estimations to accomplish the core objectives of this study. Keeping in mind the objectives and hypothesis together with the existing literature, the researcher has framed the questionnaire for work-family balance and selected suitable scales for work-family conflict and locus of control respectively. The reliability and validity of all incorporated scales was tested. Few models were proposed to prove hypothesis keeping in mind the scope of work and data availability.

The primary objective of this study was to investigate the relationship among locus of control, work-family conflict and work-family balance. In literature, these variables were studied either separately or in combination of two, but not all three variables taken together at a time. The gaps encountered during findings would leave scope for future research.

3.2 Problem statement

The literature on work-family balance and work-family conflict generally incorporate couples with or without children, dual earning couples with or without children or/ and elder care and even single parents in various studies. But studies of Young (1999); Grant-Vallone and Donaldson (2001); Waumsley et al. (2010), Valk and Srinivasan (2011) and Darcy et al. (2012) proved that this issue is not only limited to married or parents with small children/elder care. Therefore in the present study the researcher had included singles with certain amount of family responsibilities along with married respondents to broaden the meaning of ‘family’. The word ‘family’ here may include spouse, children, parents, siblings, grandparents, in-laws or any combination of these.
Studies related to work-family balance, work-family conflict and locus of control had been conducted on various sectors i.e., IT, banking, telecom, healthcare, but little literature is available on studies conducted in defence CPSEs. The study also investigated the impact of commuting on work and personal domains, on which limited literature is available. Generally the studies on work-family balance rarely consider the impact of commuting on different variables. Locus of control is linked to many work variables like job performance, job satisfaction, work-family conflict, career success, job attitudes etc., but little literature is available linking locus of control with work-family balance.

The goal of this study is therefore fourfold: (1) To study work-family balance among officers in defence CPSEs (2) To study impact of commuting time on work or personal domains (3) To explore work-family conflict issues among officers by adopting two directions of conflict i.e., work interference with family (WIF) and family interference with work (FIW) and (4) To link locus of control with work-family balance and see its moderating effect.

3.3 Objectives of the study

3.3.1 To study various aspects of work-family balance among officers i.e., working hours, sleep hours, family hours, diseases & diet, management of work & family and commuting: This objective was proved by asking general questions from the respondents that were related to their work and non-work activities. The standard working hours is defined as 48 - 50 hours per week, long hours as 51 - 60 hours per week and very long hours as more than 60 hours per week. Sleeping hours is defined as 7 - 8 hours per day. Optimum family time is defined as 21 – 30 hours per week.

3.3.2 To study the impact of commuting time on work or personal arenas: Questions were framed on distance as well as time of commute and mode of transportation adopted. The questions were framed to know the perception of respondents towards commuting time.
3.3.3 To study work-family conflict among officers: A scale by Netemeyer, Boles and McMurrian (1996) was adopted to measure WFC and FWC among officers of defence CPSEs.

3.3.4 To study relationship among work-family conflict, locus of control and work-family balance: A model was proposed linking three variables i.e., LOC, WFC and WFB. The relationship between internal locus of control and work-family balance was looked for.

3.4 Theoretical background and hypothesis

3.4.1 Hypothesis 1

3.4.1.1 Linking life-stage with work-family balance. Since a long period researchers have recognized that there are different factors impacting life-stage of a person to varying degrees. Literature recognized that as an individual grow older, they pass through different developmental stages that affect their priorities towards employment.

. This life-stage is defined in terms of age of an individual. As per Moen and Yu (2000), age defines many life events like career stage, family stage, maturity stage and biological aging. Researchers have proved that work and family demands and work-family conflict depend on life-stage (Higgins, Duxbury and Lee, 1994). A study on graduates in early career stage by Sturges and Guest (2004) found that despite graduates’ preference for work-family balance, their career success leads them to work for longer hours and take more workload thereby leading to imbalance between work and non-work lives. As per Grandey and Cropanzano (1999), age is positively related to work-family balance, due to the fact that as individuals grow old they have more resources to exploit and thus work has lesser chance to interfere with family. As per Darcy et al. (2012), work-life balance is a concern for employees at all respective ages reflecting career stages and is not restricted to married or parenthood statuses.
In the present study, life-stage is based on age. If it is the case that employees’ work-family balance varies as per the age, then there are significant implications for organizations and government policies. For example, in order to make organization’s policies and practices effective, they would be offered as per employees needs and requirements.

3.4.1.2 Linking total experience with work-family balance. As the experience of an individual increases in a particular organization, a person learns skills to cope with conflict thereby improving work-family balance. As a person’s experience increases, he/she become more familiar with rules, procedures and working culture of a company that enable them to find better strategies to cope up with demands of family (Cohen and Liani, 2009: 129-135). But those with fewer years of experience in the organization would devote most of their time and energies in building their career and therefore struggle between the demands of work and family more often (Cinamon and Rich, 2005).

H1: Satisfactory work-family balance varies according to life-stage and total experience.

3.4.2 Hypothesis 2

Commuting time is a measure of how much time people spend travelling to work, by various means. It could be by foot, bus, car, company transport or other means. The world average commuting time is 40 minutes for one-way. This is the average for people who step out of house to work. In the world, Thailand has the longest commuting time, with average of 2 hours daily including to and fro.

In India, the average commuting time for major cities is as follows: Mumbai at 47.26 minutes; Delhi at 42.96; Bangalore at 37.91; Chennai at 36.08; Hyderabad at 33.82 and Pune at 30.87 minutes. A survey by Regus (2010) revealed that though in India the average commuting time is 29 minutes, 12% of commuters travel to and fro for more than one hour daily. The common mode of transport in India is car with average of 67% people driving to work, next is bike at 12% and taxis at 9%. According to data from Payscale, a US-based salary tracking firm
(Sunil, 2011), Bangalore is the most ‘painful’ city in Bangalore to drive and the sixth most painful in the world. Bangalore is a congested city. It has a population of over 10 million adjusted into an area of 741 square kilometers, so overall population density is approximately 10,100 per square kilometer.

Time spent on commuting is negatively associated with work-family balance due to depletion of resources (Valcour, 2007: 1520). Time spent on commuting is an additional time-based demand on the top of working hours and generally leads to stress. This study is about commuting on a daily basis by officers working in defence CPSEs. In the light of literature, the following hypotheses are proposed.

\[ H2: \text{ Commuting time impacts work or personal arenas.} \]

3.4.3 Hypothesis 3

Several variables will be related to WFC and FWC as per the model proposed like: work demands, marital status, age and number of children and number of dependents. Literature provides evidence that experience of work-family conflict is more prevalent than family-work conflict (Pleck, 1977; Greenhaus and Beutell, 1985: 83-84; Gutek et al., 1991; Frone, Russell and Cooper, 1992a: 726-728). As per Frone, Russell and Cooper (1992a), work is permitted to interfere with family domain to a greater degree than family is allowed to interfere with work domain. In other words family boundaries are more permeable to work demands than are work boundaries to family obligations. Based on this motive, the present study aims to study work-family conflict among officers of defence manufacturing companies in Bangalore.

\[ H3: \text{ Work-family conflict (WFC) is more prevalent than Family-work conflict (FWC) among the officers.} \]

3.4.3.1 Work demands. Literature has confirmed negative impact of work-stressors like number of hours worked, work deadlines and overload on both work and non-work domains
(Greenhaus and Parasuraman, 1986; Frone, Yardley and Markel, 1997). Work demands are the strongest predictor of work-family conflict and are an important factor in exacerbating WFC. Research has showed that work demands like number of hours worked per week, work overload, work schedule and overtime work were positively related to WFC (Burke and Greenglass, 1999; Voydanoff, 1988; Duxbury and Higgins, 2003; Hammer et al., 2005; Yildirim and Aycan, 2008: 1366-1375). Work constraints may force employee to work for longer, irregular hours and harder to make up for inadequate supply of work resources like information, training, manpower and equipment; thus augmenting work-family conflict (Lu et al., 2010: 68-70). Working for longer hours, on weekends and holidays restricts the time that an individual has allotted for fulfilling family responsibilities. In the current study, the researcher is expecting that higher work demands in the form of longer work hours per week, working on weekends/holidays, carrying work to home and time of commuting would be associated with higher work-family conflict among the officers.

H3a: A higher level of work demands will be positively related to WFC.

3.4.3.2 Marital status. Literature provides evidence that work demands can undermine marital quality and family responsibilities can undermine job satisfaction (Frone, Russell and Cooper, 1992: 74; Parasuraman et al., 1996). Studies conducted by Byron (2005); Yildirim and Aycan (2008); Mjoli et al. (2013) revealed that marital status is weakly related to work interference with family (WIF) and family interference with work (FIW), thereby suggesting that marital status alone is poor predictor of work-family conflict. A study conducted by Cohen and Liani (2009) on female employees of hospitals found that marital status is not related to any of the conflict variables, thereby concluding that being married does not automatically add to more work demands.

Moreover marital status and quality is an important buffer for work-related stress, especially for men because of more resources to draw upon i.e., spouse and more financial resources (Barnett, Marshall and Pleck, 1992; Grzywacz and Marks, 1999; Grandey and Cropanzano, 1999 and O’Neil and Greenberger, 1994). Singles having dependents in the form of siblings and parents face WFC and FWC in a similar manner like that of married people. The
reason for including unmarried respondents in the survey is that even singles face other challenges in life and do not receive enough family support (Grant-Vallone and Donaldson 2001: 216-223; Waumsley et al., 2010: 4-10; Valk and Srinivasan, 2011: 41-47 and Darcy et al., 2012: 112-118).

\( H3b: \) Being married will be related to higher levels of FWC.

**3.4.3.3 Age and number of children.** Parental role is the most demanding non-work role demanding commitment and time (Gutek et al., 1991). Age of the oldest child is an important predictor of the work-family experience (Voydanoff, 1988). Young, dependent and number of children still living at home (in contrast to having no children) is the primary determinant of work-family conflict for working parents (Lewis and Cooper, 1998; Lundberg, Mardberg and Frankenhaeuser, 1994; Grzywacz and Marks, 1999; Quick et al., 2004; Cinnamon and Rich, 2002: 217; Eby et al., 2005; Cohen and Liani, 2009: 129-135; Mjoli et al., 2013).

Moreover Mjoli et al. (2013) found that parents with children under the age of six had the highest levels of work-family conflict, followed by parents with school-age children. The number of children living at home increases the difficulty of meeting work and family demands and therefore decreases satisfaction with work-family balance (Grandey and Cropanzano, 1999; Valcour, 2007: 1520). Those who are having more children under 18 have to devote more time to family rather than career success. Thus, Goff, Mount and Jamison (1990) advocate that supportive supervision and satisfaction with child care arrangements (regardless of location) result in less work-family conflict.

\( H3ci: \) Age of the children will be related to FWC. Children of higher age will reduce FWC.

\( H3cii: \) Number of children will be related to higher levels of FWC.

**3.4.3.4 Number of dependents.** There are basically three groups of dependents: children, adults with disabilities and elders. Home demands like lack of spousal support and presence of dependents in the family exacerbate work-family conflict and family-work conflict. Literature
has confirmed that with the increase in family size and complexity with children/elders or with sick children/elders, the work-family conflict increases (Quick et al., 2004). People who are single and those with smaller families and/or with grown up children experience less work-family tensions than those who are married, have larger families and young children or elder care. Increase in the number of children or elderly persons lead to more competition for resources at home in the form of medical care and financial security (Preston, 1984).

\[H3d\]: Number of dependents will be related to higher levels of FWC.

**3.4.3.5 Support type.** Every person does not face work demands, family obligations and conflict to the same extent. This implies that there are factors moderating the effects of work demands and work-family conflict. Among various factors, the most important factor that is widely studied is social support. Social support is defined as information leading the subject to believe that he/she is cared for, loved, esteemed and is a member of a network of mutual obligations (Cobb, 1976). There are four sources of social support: spouse, relatives and friends, organisation and colleagues. Social support emanating from work-related sources plays an important role in reducing occupational stress than does non-work related sources (Daalen, Willemsen and Sanders, 2006). Among non-work related sources the prominent social support comes from family members. Family members provide both emotional and instrumental support to individuals outside work environment. As per the ‘buffering hypothesis’ proposed by Cohen and Wills (1985), social support has been treated as a buffer between life stress and well-being (Cobb, 1976). In the light of literature, the current study takes the same theoretical concept and proposes that social support in the form of spousal support would moderate the relationship between work demands and work-family conflict.

The present study considers spousal support as an important component of social support. Spousal support is defined as the help, advice, mutual understanding that spouses give each other. There are two components of spousal support: emotional and instrumental (Frone, Yardley and Markel, 1997). Emotional support is emphatic understanding, concern, advice and affection for well-being of partner whereas instrumental support from the partner deals with household chores, child or elderly care (Adams, King and King, 1996; Frone, Yardley and Markel, 1997).
Instrumental support mitigates an individual with family responsibilities and enables to devote more time to work. Other researchers opined that spousal support is associated with management of work-family conflict (Adams, King and King, 1996; Perrewe and Hochwater, 1999; Aryee et al., 1999; Burke and Greenglass, 1999; Aycan and Eskin, 2005).

The present study focuses on instrumental support from the spouse. Studies have found that spousal support was an important component of social support and was effective in lowering levels of WFC (Burke and Greenglass, 1999; Anderson, Coffey and Byerly, 2002).

Many researchers have tried to link work-family conflict with health outcomes. The moderator role of exercise and leisure activities between work demands and work-family conflict has been neglected in literature. Allen and Armstrong (2006) studied the relationship between both directions of work-family conflict: WIF and FIW with health related behaviors like physical activity and diet. Research shows that people who exercise regularly experience less health problems and psychosomatic symptoms than those who do not exercise (Burke, 1994; Ensel and Lin, 2004). Despite importance of exercise in one’s life, individual shouldering work and family roles restrict exercise (Allen and Armstrong, 2006).

Exercise is considered one of the elements of leisure activities and is often neglected by individuals with both work and non-work roles (Nomaguchi and Bianchi, 2004). Person’s overall quality of life is determined by sum of the domains of life: work, family, community, religion or leisure (Rice, Frone and McFarlin, 1992: 156). People often report work schedules and excessive amount of work, time constraints and tiredness to interfere with leisure activities (Staines and Connor, 1980; Rice, Frone and McFarlin, 1992: 163).

$H3e$: Support type in the form of spousal support and self management will be negatively related to WFC.

The conceptual framework including all the study variables is presented in figure 3.1. Work demands include number of hours worked per week, working on weekends/holidays, carrying work to home, length and time of commuting and are expected to be related to work-
family conflict. Other variables that are expected to be associated with WFC and FWC are marital status, age and number of children and number of dependents. It is also proposed that spousal support and self management moderates the relationship between work demands and work-family conflict. It is expected that officers who experience higher levels of work demands will face less work-family conflict when they receive support from their spouses and are involved in self-management.

Figure 3.1. Proposed conceptual model for WFC/FWC
3.4.4 Hypothesis 4

3.4.4.1 Locus of control and work-family balance. The challenge of balancing work and family demands is one of the prime concerns for both individuals and organisations. There are numerous studies pertaining to locus of control and work-family balance as independent entities, however empirical research on work-family balance related to locus of control is very limited. As stated earlier work-family balance is related to well-being of individuals and organisations. Employees with better work-family balance will contribute more significantly towards organisational development and success (Naithani, 2010: 148). Hall and Richter (1988) holds the opinion that the employee needs to have clearly defined boundaries between the work and non-work and too much overlap between work and family can cause employee burnout and dissatisfaction.

Subjective well-being is an indication of quality of life in individuals and societies. If the life is happy then the life seems to be good. Subjective well-being is an emotional element of the balance between positive and negative emotions and a cognitive element of a person’s content with his/her life. Subjective well-being is defined as an evaluation of individual’s life and passing a judgement on it. Internal locus of control has a positive effect on subjective well-being (Klonowicz, 2001: 43; Fiori et al., 2006: 244-259; Hamarta et al., 2013).

The research conducted by April et al. (2012) conclude that maximum level of happiness is achieved by individuals with bi-local expectancy or dual control of shared responsibility (i.e., balanced locus of control expectancy of an individual, while both internal and external expectancies representing extremes and signify imbalanced locus of control expectancy). This research emphasises the need for balance in life and extremities should be avoided for optimal well-being and happiness.

Ng, Sorensen and Eby (2006) in their research related locus of control with number of work outcomes under three broad categories: LOC and well-being, LOC and motivation and LOC and behavioural orientation. They found that internal locus of control is negatively related to job stress, role conflict and work-family conflict.
Ng and Feldman (2011) studied locus of control with respect to organisational embeddedness. They found that individuals with internal locus of control are more likely to acquire greater work resources and acquire additional work resources because they socialise more actively with their colleagues and supervisors. Similarly internals develop more social networks which in turn lead employees to be more embedded in their organisations.

Mohapatra and Gupta (2010) studied emotional intelligence in relation to work values and internal locus of control among executives in public sector. They found significant relation between emotional intelligence and internal locus of control as well as work values. Organisations value employees with high work ethics and values i.e., who possess willingness to work hard, who come to work on time, who take initiative, who have motivation to get the job done in a given time period and those who are responsible for their behaviour and actions.

Employees who are committed to organisation’s goal are more satisfied with their job. Internals tend to have higher goal commitment and are more satisfied with their jobs than externals. Also goal commitment plays a mediating role between personality traits and job satisfaction (Lau, 2012: 1-9).

Valcour (2007) introduced the concept of satisfaction with work-family balance construct. Satisfaction with work-family balance is a level of contentment resulting from individual’s perception that they have sufficient resources to successfully handle sum of work and family roles. He proved that having greater command over time (i.e., having a choice as to how much to work, when and how to schedule work and when to discontinue work to meet family demands) and job complexity help to meet both work and family demands and ultimately foster greater work-family balance. Job complexity and control over work time help to preserve resources like self-esteem, energy and to gain more satisfaction.

**H4:** Internal locus of control is positively related to work-family balance.
3.4.4.2 Locus of control and work-family conflict. Literature provides evidence for the beneficial nature of locus of control. High internal locus of control can be viewed as a resource itself as it motivates individuals to go out and accumulate resources to deal with stressful circumstances. Locus of control is an effective factor to reduce job stress by fostering job satisfaction, promotion, self-esteem, increasing salary and quality of life. As per Karimi and Alipour, (2011), individuals with an internal locus of control are more capable of coping up to problems and events that they experience at workplace.

Role stress arise from time pressure, excessive work demand, role conflict, lack of communication among the members of the organisation and problematic customer relationships. There is evidence which shows that internals cope better with stressful circumstances by having a control over self. When compared, internals experience lower levels of job stressors and work anxiety than externals (Spector, 1982: 492; Spector and O’Connell, 1994: 8; Khan et al., 2012: 160-166), on the other hand externals are more vulnerable to the effects of stressful workplace and report high levels of stress, burnout and low self-esteem (Rashid and Talib, 2013: 729-737). Work-family conflict is an interpreter of job satisfaction and stress symptoms whereas locus of control had direct, moderator and mediator effect on the relationship between work-family conflict and well-being (Noor, 2002: 647-660).

Locus of control acts as a moderator for stress and work-family conflict (Parkes, 1994). The study conducted by Noor (2006) showed that having internal locus of control is advantageous in moderating work-family conflict. People with external work locus of control experience greater levels of stress at work, lower job satisfaction and more symptoms of ill health than individuals with internal work locus of control (Muhonen and Torkelson, 2004: 25-26). Internals experience less work-family conflict as they actively look for assistance and solutions to reduce the level of conflict. Internals perceive stressors to be manageable and less damaging than externals and thus overall internals experience less work-family conflict, job stress and burnout (Ng, Sorensen and Eby, 2006: 1062).

Srivastava (2011) conducted a study on managers of private sector to find the moderating effect of locus of control and organisational support on managerial effectiveness and job burnout.
She found that job burnout has a negative impact on managerial effectiveness and managers with an internal locus of control are more satisfied with their jobs and are more committed towards their organisation. The reason for this is that managers believe that they are masters of their fate and situations and hence are more focused in their work. She also found that internal locus of control has a moderating effect on managerial effectiveness and job burnout.

\textit{H4a:} There is a significant correlation between locus of control and work-family conflict.

\subsection*{3.4.4.3 Work-family conflict and work-family balance}

Early literature confirms work and personal life to be independent, segmented domains, but both these domains significantly influence each other (Edwards and Rothbard, 2000). Employees’ non-work domain is often ignored by the employers as they consider this domain to be sole responsibility of employees. Organisation’s response towards non-work roles depends on work and non-work relationship and employee and employer relationship.

The scarcity approach explores the domain of work-family conflict. As per scarcity theory (Marks, 1977; Chapman, Ingersoll-Dayton and Neal, 1994), the individuals have constant amount of time, energy and attention such that increase in roles and scarcity of resources results in role conflict and affects performance of individuals. As per Aryee, Srinivas and Tan (2005), employees are resorted to surge in demands on their time, thereby intensifying work-family interface. When roles are not prioritized or when there is absence of role balance, then work-family conflict emerges. Grzywacz, Carlson, and Zivnuska (2009) have clearly demarcated work-family balance from work-family conflict and balance contributes to job satisfaction, organizational commitment and family satisfaction.

\textit{H4b:} There is a significant correlation between work-family conflict and work-family balance.
Figure 3.2. Proposed model for relationship among WFC, LOC and WFB
3.5 Methodology

3.5.1 Participants and procedure

The sample comprised of 338 officers. The data for this study was collected during February 2013 to July 2014 from officers working full time in manufacturing unit of three defence CPSEs at Bangalore i.e., HAL, BEL and BEML.

The permission was sought from HR department of defence CPSEs for data collection. The data collection began with the quantitative approach i.e., questionnaires were filled by the respondents. Each questionnaire was administered personally by the researcher. Two days in a week i.e, friday and saturday was dedicated to collect the data in a phased manner. Respondents were assured of the confidentiality of the data and were told that data would be used solely for academic purpose.

2950 numbers of officers were working in the manufacturing complex of defence CPSEs at Bangalore. In BEL, total 350 questionnaires were distributed to the respondents. 90 respondents did not return the filled in questionnaires. 41 questionnaires were rejected after scrutiny due to excessive missing data. In HAL, total 145 questionnaires were distributed to the respondents. 47 respondents did not return the filled in questionnaires. 36 questionnaires were rejected after scrutiny due to excessive missing data. Similarly in BEML, total 140 questionnaires were distributed to the respondents. 40 respondents did not return the filled in questionnaires. 43 questionnaires were rejected due to excessive missing data. The overall response rate was 53.23%. Finally, questionnaires of 338 officers were taken for analysis.

3.5.2 Quantitative approach

Questionnaires were used for collecting data from the respondents. A cover letter was attached to each set of questionnaire that explained the goal of the survey and assured
respondents of the confidentiality of their responses. The questionnaires have been described as
below:

3.5.2.1 Demographic variables under study. Appendix A consists of questions pertaining to demographic profile of the respondents. Filling of person’s name was kept optional. Other items were compulsory to be filled by respondents. Age and total experience was measured by the actual years. Marital status was measured as a dichotomous variable (0 = single, 1 = married). Managerial level was measured as the level occupied in the organization and is coded as follows 1 = Junior, 2 = Middle, 3 = Senior and 4 = Top. Partner’s employment was measured as (0 = employed, 1 = not employed). The variable of age of children was measured by actual years and number of children was measured by actual number of children. Number of dependents was measured by actual number of dependents. Education was measured by the highest degree obtained.

3.5.2.2 Work-family balance questionnaire. This scale was developed by the researcher to measure various aspects of work-family balance (See Appendix B). The questionnaire comprises of six attributes: Work, Sleep, Family time, Diseases & diet, Management of work & family and Commuting. The questionnaire consists of total of twenty six items. Out of which 4 were for tapping work, 2 for sleep, 2 for family time, 3 for diseases & diet, 7 for management of work & family and 6 for commuting. The last question invites suggestion/s from the respondents.

The questions that are information giving were not scored. Thus WFB comprises of five attributes that were scored i.e., Work, Sleep, Family time, Management of work & family and Commuting. Higher scores indicates better work-family balance. The reliability coefficient i.e. Cronbach’s alpha for this scale was 0.6524.

An example of representative item included is: ‘How many hours in a week do you normally work?’.
In the present study, the validity of the scale was tested with the help of pilot study. The scoring of items of questionnaire is described below.

3.5.2.2.1 Work

Work hours – The total number of hours worked per week was assessed through one question: “How many hours in a week do you normally work?”. This variable was measured on a scale: 1 = >60 hrs, 2 = 56 – 60 hrs, 3 = 51 – 55 hrs, 4 = 46 – 50 hrs and 5 = <=45 hrs.

Working on weekends/holidays – This variable was assessed through one question: “Are you devoid of work on weekends/holidays?”. There were three options to choose from: 2 = Yes, 0 = No and 1 = Sometimes. There was another general question asking the frequency of work on weekends/holidays.

Carrying work to home - This variable was assessed through one question: “Are you devoid of carrying office related work to home?”. There were three options to choose from 2 = Yes, 0 = No and 1 = Sometimes.

3.5.2.2.2 Sleep

Two questions were designed to assess this variable. The first question was “How many average hours per day do you sleep?”. This variable was measured on a scale: 1 = <5 hrs, 2 = 5 – 6 hrs, 3 = 6 - 7 hrs, 4 = 7 - 8 hrs and 5 = > 8 hrs.

The other question was “Are you devoid of disturbed sleep thinking about your job/target?”. There were three options to choose from: 2 = Yes, 0 = No and 1 = Sometimes.

3.5.2.2.3 Family time

Two questions were designed to assess this variable. The first question was “How many hours in a week do you spend with your children/ family excluding holidays?” This variable was
measured on a scale: 1 = <= 10 hrs, 2 = 11 - 20 hrs, 3 = 21 - 30 hrs, 4 = 41 - 40 hrs and 5 = > 40 hrs.

The other question was consisted of four subparts. There were two options to choose from 1 = Yes, 0 = No for each question

3.5.2.2.4 Diseases and diet

Three general questions were designed seeking information about disease and diet. The respondents were required to tick the option they feel was most suitable for them and were given the choice to tick more than one option. These three questions are information revealing and hence were not scored.

3.5.2.2.5 Management of work and family

Exercise and leisure activities - Two questions were designed to assess these variables. “Do you exercise?”. There were three options to choose from: 2 = Yes, 0 = No and 1 = Sometimes and “Are you involved in any leisure activities?”. There were two options to choose from 1 = Yes, 0 = No. There was a third information giving question related to type of leisure activities an individual was involved in. This question was not scored.

Stress management – This aspect was assessed by one question. “How do you manage stress arising from your work pressure?”. This question was not scored.

Company measures - Two questions were designed seeking information about measures taken by company to balance work-family. “Does your company take any measures to balance work-family?”. The respondents had to tick either ‘yes’ or ‘no’. The other question was “If, yes what are the measures taken by your company?”. For second question, the respondents could tick more than one option. These questions were not scored.
Individual use of company support policies - One question was designed to assess this variable. The question was “Do you utilize measures taken by your company to balance work and family?” There were two options to choose from $1 = \text{Yes, } 0 = \text{No}$.

3.5.2.2.6 Commuting

Length and time of commuting – Two questions were designed to assess commuting of respondents. The questions were “How far do you stay from your organization’s premises?”. This variable was measured on a scale: $1 = \text{More than 20 kms}, 2 = 16 – 20 \text{ kms}, 3 = 11 – 15 \text{ kms}, 4 = 6 – 10 \text{ kms} \text{ and } 5 = 0 – 5 \text{ kms}$.

The other question was “How many hours per day do you spend on commuting (To and fro)?”. This variable was measured on a scale: $1 = \text{others}, 2 = 91 – 120 \text{ min}, 3 = 61 – 90 \text{ min}, 4 = 31 – 60 \text{ min} \text{ and } 5 = 0 – 30 \text{ min}$.

Mode of transportation - This aspect was assessed by one question. “What mode of transportation do you adopt for commuting?”. This question was not scored.

Perception of respondents towards commuting - Three questions were designed to assess perception of respondents towards commuting. The questions were designed by the researcher. The response scale was a 5-point Likert scale, where ‘5’ represented strong agreement and ‘1’ represented strong disagreement. Sample item included “Saving on commuting time would help me balance work and family”. Out of these three questions, the question “Commuting disturbs my work or personal activities” is scored in reverse order i.e., ‘5’ represent strong disagreement and ‘1’ represent strong agreement.

3.5.2.3 WFC/FWC questionnaire. These scales were developed by Netemeyer, Boles and McMurrian (1996) (See Appendix C and D). It is a 10 – item scale with 5 items each under WFC and FWC scales. The instructions that preceded these items are as follows: “The given sets of questions are about your work and non-work lives. The word ‘Family’ may include your spouse, children, parents, siblings, grandparents, in-laws or any combination of these”. All items were measured using a 7-point Likert scale, with 1 meaning strongly disagree and 7 meaning strongly agree. High scores indicated high levels of work-family conflict.
Examples of representative items included are: ‘The demands of my work interfere with my home and family life’ (Work interference with family). ‘I have to put off doing things at work because of demands on my time at home’ (Family interference with work).

In the present study, the validity of the scale was tested with the help of pilot study. The result obtained from pilot study showed that the scale is applicable for Indian population. The reliability coefficient i.e. Cronbach’s alpha for WFC scale was 0.91 and for FWC scale 0.85.

3.5.2.4 Locus of control. This scale was developed by Udai Pareek (1992) (See Appendix E). It is an Indian adaptation of the IPC scale developed by Levenson (1972). It is 30 – item scale with 10 items each under internality, externality (others) and externality (chance). The 5-point scale is used in scoring responses ranging from “hardly feel” (0) to “strongly feel” (4).

Example of representative items included is: ‘I can largely determine what matters to me in the organization’ (Internal). ‘The persons who are important control most matters here’ (External – others) and ‘One’s career is to a great extent, a matter of chance’ (External – chance).

The three dimensions of LOCO inventory are: Internal (I), External – Others (E-O) and External – Chance (E-C). Scores will range from 0 – 40 for each of the three columns internality, externality (others) and externality (chance).

In internality score, if an individual score 33 and above is said to have very high internality and a score from 29 – 32 shows high trust in one’s ability and effort. On the other hand, an individual scoring 17 or less has very little confidence on his/her efforts. The reliability coefficient i.e. Cronbach’s alpha for LOC scale was 0.78.
3.5.3 Statistical method

Statistical methods used for computing quantitative data included descriptive statistics of mean and standard deviation.

3.5.3.1 One-sample ‘t’ test was used to compute confidence interval and conduct a hypothesis test of the mean when the population standard deviation, is unknown.

3.5.3.2 Analysis of Variance (ANOVA) was used to test the significance of the differences of variances among more than two sample means.

3.5.3.3 Cronbach's alpha was used to test the reliability of the chosen scales in Indian scenario. Cronbach's alpha is an indicator of the internal consistency of a scale that estimates how well a set of items measures a single unidimensional latent construct. The value of Cronbach’s alpha should be more than 0.6 to be acceptable.

3.5.3.4 Correlations were computed to find out the relationships between two or more than two variables. The coefficient of correlation is denoted by the symbol ‘r’. With the help of correlation analysis we can measure in one figure/table the degree of relationships existing between the variables.

3.5.3.5 Regression was used to investigate and form the relationship between a response variable and one or more predictors.

3.5.3.6 Structural Equation Modeling (SEM) was used to compute complex relationships between one or more independent variables and one or more dependent variables. SEM is computed with the help of software R.
3.5.4 Pilot study

A pilot study is a small scale preliminary study conducted in order to evaluate feasibility, time, and effect size in an attempt to predict an appropriate sample size and improve upon the study design prior to conduction of a full-scale research.

Pilot study was conducted prior to final data collection that enabled the researcher to gain information on daily activities of respondents pertaining to their work and family as well as locus of control. Pilot study helped to discard irrelevant questions and to reframe difficult or ambiguous questions. Since one of the questionnaires was developed by foreign authors, its validity and reliability has to be checked in Indian context. For this purpose Cronbach Alpha was computed for each scale. Pilot study enabled to finalize the sample and to select appropriate tools for data collection.

3.5.5 Population, Sample, Sample size and Method of sampling

Three defence CPSEs were selected for this study i.e., BEL, HAL and BEML. These three companies account for nearly 80% of the total defence production in India. The minimum sample from each company was taken as 10% of the total population. The company in which the population was more, the sample size was kept less and sample size was more for company having less population of officers. The population of the present study was officers working in defence CPSEs of Bangalore. These officers were occupying different managerial position in the organization. 60 years is the age of retirement of defence CPSEs.

Sampling technique used for collecting response from the respondents was convenience sampling. Convenience sampling was used as questionnaires were distributed among the respondents based on the ease of access of researcher. Time allotted by HR department for data collection for each chosen company ranged from 21 – 30 days. After careful scrutiny of the returned filled in questionnaire, 338 responses were found appropriate for the study. Total 338 respondents constitute approximately 12% of the population.
Table 3.1

*Sample distribution*

<table>
<thead>
<tr>
<th>Company name</th>
<th>Population</th>
<th>Sample size</th>
</tr>
</thead>
<tbody>
<tr>
<td>BEL</td>
<td>2200</td>
<td>219 (10%)</td>
</tr>
<tr>
<td>HAL</td>
<td>350</td>
<td>62 (17.71%)</td>
</tr>
<tr>
<td>BEML</td>
<td>400</td>
<td>57 (14.25)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>2950</strong></td>
<td><strong>338 (12%)</strong></td>
</tr>
</tbody>
</table>

*Notes:* The sample consists of 338 officers of defence CPSEs constituting nearly 12% of the total population.
3.6 Scope of the study

Scope of research is what area of phenomenon we are going to cover and its use. Keeping all resources and limitations in mind, the scope of this study is as follows.

1) The study is centered at defence CPSEs in Bangalore.
2) The respondents should be either married or single.
3) The study is restricted to officers only.

3.7 Limitations of the study

The present study contains few limitations which are as follows. First, the study is based on a sample from one occupation i.e. defence manufacturing consisting of officers working in three defence CPSEs in Bangalore. In these public sector enterprises, everybody is assigned to work for six days in a week for eight hours daily. Here employees get extra remuneration or leave benefits for working overtime, but officers are deprived of such benefits. Thus the findings cannot be generalized to other occupations or to private sector where people have different work settings and culture.

Second, the female constitute a small percentage of the sample (15.4%). Thus, the study could not compare findings from gender point of view as the proportion of female was too low to have any comparison.

Third, in India conducting research on defence PSUs is quite difficult due to security issues. These companies come under Ministry of defence and the data are kept very confidential. Even the employees working in these companies are restricted to carry laptops, pen drives and mobile phones inside the companies. Any external visiting or conducting research on these companies has to relinquish all electronic gadgets at the reception and all the documents are thoroughly checked on entering and leaving the premises.
Fourth, data from these companies has to be collected within a given time-frame given by each company. Many officers were either reluctant or were filling the questionnaire after several reminders. Time pressure of the respondents made deeper probe into the problem difficult. This severely hampered the sample size included in the survey.

3.8 Practical implications

The key findings of the study will help to identify the work and family related variables contributing to work-family balance and work-family conflict. Thus the study would help the Human Resource department to a) understand the work-family balance, work-family conflict, locus of control and its various dimensions b) design work related dimensions in terms of task variety, autonomy, and focus on quality of work to improve work-family balance of officers.

In addition the study would help the companies to formulate work policies for better selection and talent management. The organisations may have to amend their policies to cater to the needs of employees at different life-stages and experience. The policies should be applicable to all employees irrespective of the marital or parenthood status and should cater to different need and requirements of employees. HR interventions addressing work-family balance issues may in the long run provide employer value proposition and competitive advantage to the organisation.

The findings showed that both work and non-work roles are more strongly related to both WFC and FWC. Hence, it is necessary for employers to assist employees in coping better with pressures from work and family. It is inevitable to create positive attitudes among employees regarding their job and work environment, to reduce WFC and FWC. This strategy would be more effective than investing in support policies for coping with work and family pressures.

Variety of employee behaviours may be related to employee’s locus of control. Managerial and leadership effectiveness can be improved by understanding the natures and power of control beliefs. There is a need to address managers with an internal locus of control to
build a healthy organization. Internal locus of control can be improved through cultivating interpersonal relationships. Internal locus of control can be developed by creating educational and work environments characterized by freedom to set goals, opportunities for personal growth and opportunity to influence important circumstances.