CHAPTER 3

3. Theoretical Framework and Hypothesis Development

3.1 Introduction

As already mentioned in the first chapter this study consists of several objectives but the most important objectives which relates to the other sub objectives were (1) to measure the stress levels of the IT professionals (2) to find out whether there is a relationship between demographic factors and IT Professionals' stress levels and (3) to find out whether there is a relationship between working environmental factors and IT Professionals' stress levels. The impetus for such a study came from the literatures by Ivancevich, Napier, and Wetherbe, 1983 [3] and. Rajeshwari, and Anantharaman, 2003 [2].

In order to achieve the objectives after the literature reviews being done thoroughly the correct conceptual framework must be formed and the best research design should be adopted. With the help of the authors of several previous literatures this was able to be achieved. This chapter clearly and in detail explains the conceptual frame work and the formation of hypothesis.
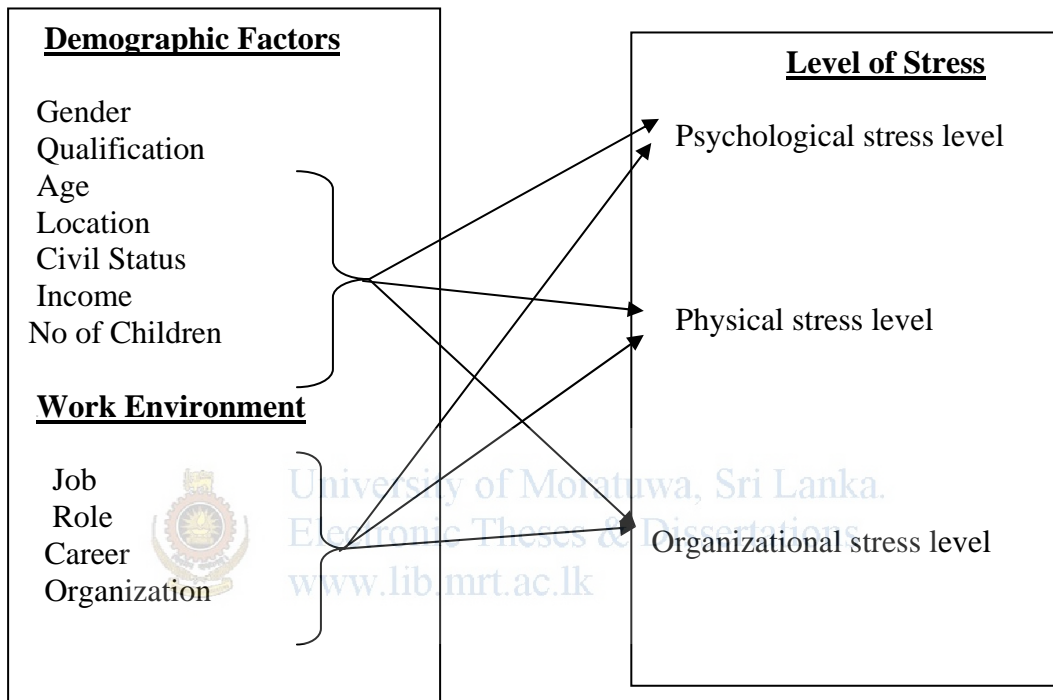
3.2 Conceptual Framework

The main conceptual frame was developed to do the study and reach the objectives mentioned in the previous chapter. This conceptual frame work was developed taking the previous study of Ivancevich, Napier and Wetherbe in 1983 [3] as the reference. It is created in such a way that it completely supports to build and test a hypothesis to do this study. This main conceptual frame work can be further broken in to 2 separate parts to make it more simple and understandable. In this model the independent variables are chosen as the demographic and working environmental factors. The dependant variables

are taken as the three different levels of stress among the IT Professionals. Where finding the relationship between the independent variables and the dependant variables would be the task to achieve.

Independent Variables   **Dependent Variables**

Demographic Factors

Gender
Qualification
Age
Location
Civil Status
Income
No of Children

Work Environment

Job
Role
Career
Organization

Level of Stress

Psychological stress level

Physical stress level
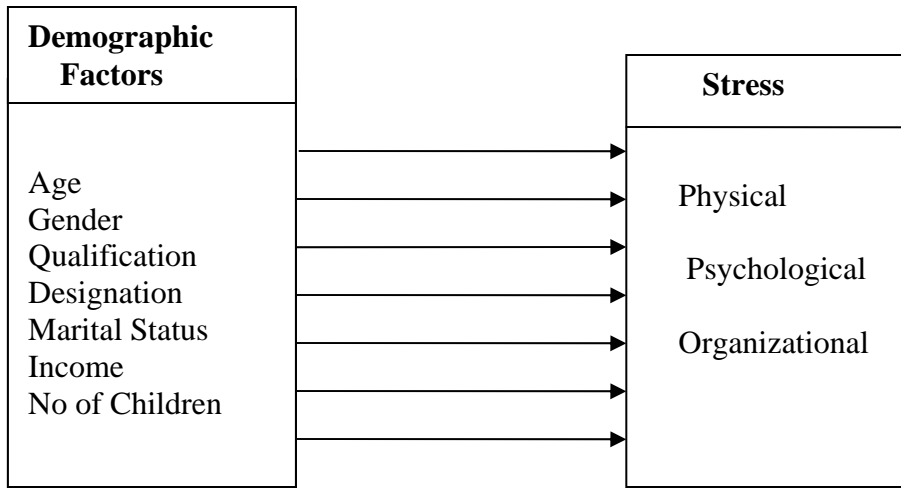
Organizational stress level

Figure 3-1 Conceptual Framework

In detail conceptual frame work can be separately divided into two different parts. One is to check the relationship of the demographic factors and stress levels of IT Professionals. The other finding the relationship between the working environmental factors and stress levels. These variables were thoroughly checked and taken as the independent and dependant variables from the several previous studies done by the researchers earlier which are similar at certain conditions.
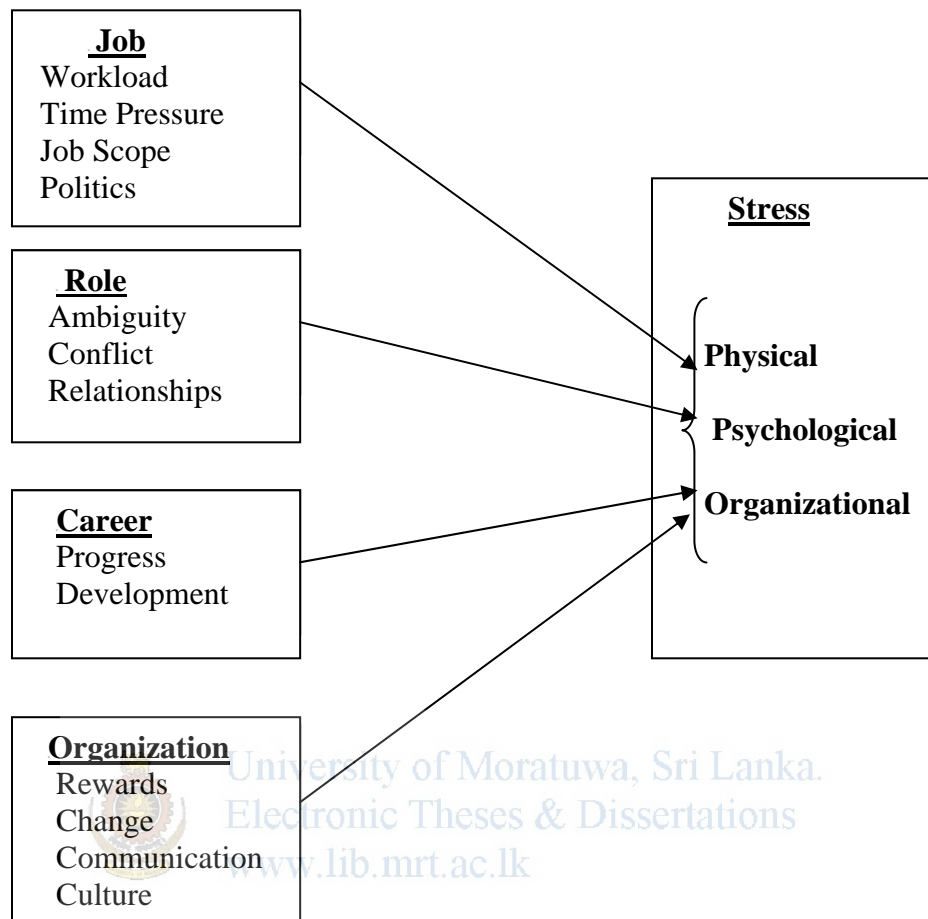
Independent Variables   **Dependant Variable**

Demographic Factors		Stress
Age Gender Qualification Designation Marital Status Income No of Children	→	Physical Psychological Organizational

Figure 3-2 Conceptual frame works of relationships between Demographic Factors and Stress Levels

The independent variables of the demographic factors gender, age, educational qualifications, marital status, income, number of children etc. are taken. The dependant variables are the three different levels of stress which are Physical stress (health hazards i.e., headache, eye pain, digestive problems etc.), Psychological stress (satisfaction, tension, commitment etc.) and Organizational stress (quality, quantity, absenteeism, motivation etc.). The independent variables and dependent variables were formed referring to the previous researches done by Ivancevich, Napier and Wetherbe in 1983 [3], Sethi, King, and Quick in 2004 [18] and Vokic and Bogdanic in 2007 [27].

Figure 3-3 Conceptual frame work of relationships between working environmental factors and stress Levels

As the independent variables of the working environmental factors are amount of job they do, role they play, career experience, subordinated working under, rewards etc. are taken. Where the dependant variables are again the three different levels of stress which are Physical stress (health hazards i.e., headache, eye pain, digestive problems etc.), Psychological stress (satisfaction, tension, commitment etc.) and Organizational stress (quality, quantity, absenteeism, motivation etc.). These variables were thoroughly checked and taken as the independent and dependant variables from the several previous studies done by the researchers earlier which are similar at certain conditions. The independent variables working environmental stressors were developed using the previous done by several researchers in last several years back mainly this study has

taken the researches done by Ivancevich, Napier and Wetherbe in 1983 [3], Rajeshwari, and Anantharaman in 2003[2], Gallivan in 2003[8] and Sethi, King, and Quick in 2004[18].

3.2.1 Measurement of Independent variables

The demographic factors and the working environment factors are formed as the independent variables by the author. These are used in the previous studies in different countries for achieving different objectives which were closely similar to the current study.

These variables under demographic factors are categorized and defined as follows. In the case the demographic variables they become the dimensions.

- Age – Where the age of each IT Professional would not be the same it may vary from a very less age to middle and high range of ages. In which it will be helpful to identify whether the stress levels differ according to the age.
- Gender – In this case there are 2 definite choices such as male and female. In many other researches of stress among different professionals have proved that the stress levels of female is greater than the male as their role demands as wife, mother and other responsible roles in their lives. This needed to be checked among IT professionals as well.
- Qualification – There were many educational qualifications available for the IT professionals such as diploma, higher diploma, Bachelors in IT or non IT, Masters in IT or non IT etc.
- Designation – As per the objectives of this research the designations that are considered in this research would be Senior Software Engineers, Technical Leads and Project or IT Managers. As these are very important, to which according to the designation the IT professionals hold their work and environment factors.
- Income - The different income range is identified as it differs company to company.

- Marital status – Stress plays a big role in marital status of an employee according to the previous researches done by Vokic and Bogdanic in early 2007 [27].

- Having children or not – This is considered to be a important independent variable as the responsibilities differ from a person who have children and do not have children to the way they react to stress.
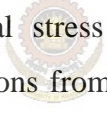
As the independent variables of the working environmental factors would be taken as below. In this part the factors job, role, career and organization becomes the concept and the dimensions are the characters defining them.

- Job - Where factors relating to job are workload, time pressure, job scope, and politics. These main areas are tested in order to job related working environment. These factors are defined as such in the previous studies done by Ivancevich, Napier and Wetherbe [3] , in which they clearly mention these.

- Role - This is identified by the ambiguity factor, conflicts and relationship in the working environment. The way these role related factors are measured and operationalzed was shown in Table 3-2 clearly.

- Career – This is identified with progress of their career and their development relating to career. These factors indicate whether the individuals believe that their work assignment provides them with opportunities to improve and develop their carrier. Refer to Table 3-2 which clearly shows how it was operationalized.

- Organization - This is identified with the factors such as the rewards, change, communication and culture that possesses in the organizational environment. The independent variables working environmental stressors were developed using the previous done by several researchers in last several years back mainly this study has taken the researches done by Ivancevich, Napier and Wetherbe [3]. These

factors differed from company to companies as their culture followed by the management is different. The variables were operationalized and measured as shown in Table 3-2.

3.2.2 Measurement of Dependant variables

In the present research the dependant variables taken are the different levels of stresses that may exist among the IT professionals such as the Senior Software Engineer, Technical Lead and the Project managers. These stress levels influence on the IT Professionals at different stages of their work. For this concept the different levels of stress becomes the dimension and the characteristics which defines these stress will be the elements.

- Physical stress –The physical stress is defined to be the change in health conditions from normal to abnormal. It is identified from the symptoms of their health related problems such as cholesterol, blood pressure, eye strain, headache, digestive problems etc. Table 3-3 shows how this was operationalized.

- Psychological stress – This is defined to be the mental disorders. This causes problems psychologically. The characteristics to identify this stress are work satisfaction, tension, loss of commitment, lack of motivation etc. Table 3-3 shows how this is operationalized. Table 3-3 shows how this was operationalized.

- Organizational Stress – This stress is defined as which different abnormal behavior that may occur only with in the organizational environment. This can be identified with the characteristics quality, quantity, absenteeism, motivation, dedication etc. Table 3-3 shows how this is operationalized.

All these dependant variables were referred in the previous literatures and especially the one done by Ivancevich, Napier and Wetherbe in 1983 [3] they have argued that these are the three different levels of stress that could occur to IT Professionals during his work and after work. And these have to be taken as the dependant variables to check the relationships.

3.2.3 Operationalization

With the help of the conceptual framework developed the independent and dependent variables are operationalized as shown in Tables 3-1 and 3-2. The table shows a clear picture of how the above defined variables are measured and indicated. The type of questions formed with the help of the elements and indicators defined in order to measure the variables are clearly shown how they are operationalzed.

Each of the different variables taken has different dimensions and elements have been shown below in the Tables 3-1, 3-2 and 3-3 are used to identify the variables and to measure them with least error.

The tables give a clear picture of the concept, dimension and elements of the dimensions defined in the above section. The questions formed in both operations have the scale of interval and nominal scales. For the interval method the Likert scale was used with the magnitude from 1-5. This helped to do the arithmetical operations in the research to achieve the objectives.

The elements of the working environment factors concept are well identified as shown in the table 3-2. Each element is measure in the Likert scale to measure the weight of each element.

Same as that the concept, stress level measurements also contains elements with which the measurements are done using the Likert scale. Finally the weight of each scale will show the levels of stress.

Table 3-1 Operationalization table of Demographic factors

Concept	Dimensions	Elements	Questions	Scale
Relationship of Demographic Factors	Gender	Male or Female	QA.2	Nominal
	Age	Age limit they belong	QA.3	Interval
	Qualification	Highest educational qualification	QA.12	Nominal
	Designation	Project Manager/Senior Software Engineer/ Tech Lead	QA.7	Nominal
	Income range	Salary range per month	QA.9	Interval
	Marital Status	Single or Married	QA.13	Nominal
	Having Children	Having Children or not	QA.14	Nominal

Table 3-2 Operationalization table of Working Environment

Concept	Dimensions	Elements	Measure	Questions	Scale
Relationship of Working Environment	Job	Workload	Projects handled	Projects handled exceeding the job limit	QBJ.1	Likert
		Time Pressure	Least time for completion	Working beyond the working hours/time to complete projects	QB.J.2,QBJ.4	Likert
		Job Scope	Personal job scope	Whether the job handled carries scope	QBJ.3	Likert
		Politics	Personal influence	Influence over the decisions taken by management	QBJ.5	Likert
	Role	Ambiguity	Reporting/Objectives/ Roles played	Playing different roles beyond the job title/Reporting to many people	QBR.1,QBR.2, QBR.4	Likert
		Conflict	Conflicts within team	Having conflicts among co-workers	QBR.3	Likert
		Relationships	Relationship maintained	Relationship maintained with higher management	QBR.5	Likert
	Career	Progress	Promotions	Promotions given on time/Progress meeting of goals regularities	QBC.1, QBC.2	Likert
		Development	Personality development /Knowledge development	How the career helps in development of knowledge and personality	QBC.3, QBC.4, QBC.5	Likert
	Organization	Rewards	Performance recognition	Good performances are frequently addressed	QBO.1	Likert
		Change	Resource and Technology	Changes in resources /technologies used in the organization	QBO.2	Likert
		Communication	Language	Language barrier	QBO.3	Likert
		Culture	Working hours/Overseas traveling	Working hours/Traveling	QBO.4, QBO.5	Likert

Table 3-3 Operationalization table of different levels of stress

Concept	Dimensions	Elements	Measure	Questions	Scale
Measurement of stress	Physical stress	Health related problems	Cholesterol problem	QC1.1	Likert (1-5)
			Blood pressure	QC.10	Likert (1-5)
			Eye strain	QC1.2	Likert (1-5)
			Headache	QC1.5	Likert (1-5)
			Digestive problems	QC1.1	Likert (1-5)
			Unhealthy	QC1.3, QC1.4, QC1.6, QC1.7, QC1.8, QC1.9, QC1.11	Likert (1-5)
	Psychological stress	Mental disorders	Work satisfaction	QC2.2	Likert (1-5)
			Tension	QC2.2, QC2.3, QC2.9	Likert (1-5)
			Loss of commitment	QC2.4, QC2.16	Likert (1-5)
			Lack of Motivation	QC2.14	Likert (1-5)
			Disturbed	QC2.5, QC2.6	Likert (1-5)
	Organizational stress	Abnormal behavior	Quality of work	QC3.3, QC3.7	Likert (1-5)
			Quantity of work	QC3.1	Likert (1-5)
			Absenteeism	QC3.21,	Likert (1-5)
			Motivation for work	QC3.14,	Likert (1-5)
			Dedication for work	QC3.18	Likert (1-5)

3.3 Hypothesis

The hypothesis was developed taking the objectives mentioned in the first chapter as the reference. According to that the aspects given below would be the hypothesis developed in order to test and achieve the objectives for this study.

HA0: There is no positive relationship between the demographic factors and stress levels of IT professionals in Sri Lankan Software Development Industry.

HB0: There is no positive relationship between the working environmental factors and the stress levels of IT Professionals in Sri Lankan Software Development Industry.

These hypotheses can be further subdivided into several taking each and every demographic factor and each and every working environmental factor separately. In related to the demographic factors the hypothesis can be mentioned as:

HA01: There is no positive relationship between gender and stress levels of IT professionals in Sri Lankan Software Development Industry.

HA02: There is no positive relationship between age and stress levels of IT professionals in Sri Lankan Software Development Industry.

HA03: There is no positive relationship between designation and stress levels of IT professionals in Sri Lankan Software Development Industry.

HA04: There is no positive relationship between qualification and stress levels of IT professionals in Sri Lankan Software Development Industry.

HA05: There is no positive relationship between income and stress levels of IT professionals in Sri Lankan Software Development Industry.

HA06: There is no positive relationship between marital status and stress levels of IT professionals in Sri Lankan Software Development Industry.

H_{A07}: There is no positive relationship between IT professionals having children and their stress levels in Sri Lankan Software Development Industry.

The hypothesis that has been formed in related to the working environment factors are:

H_{B01}: There is no positive relationship between the working environmental factors (job, role, career and organization) and the physical stress level of IT Professionals in Sri Lankan Software Development Industry.

H_{B02}: There is no positive relationship between the working environmental factors (job, role, career and organization) and the psychological stress level of IT Professionals in Sri Lankan Software Development Industry.

H_{B03}: There is no positive relationship between the working environmental factors (job, role, career and organization) and the organizational stress level of IT Professionals in Sri Lankan Software Development Industry.