CHAPTER 3
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3.1 Objectives of the study

This study is an attempt to measure emotional intelligence and organisational role stress of managers working in industrial organisations and to examine the relationship between Emotional Intelligence and Organisational Role Stress. It also attempts to explore the influence of personal and occupational variables viz., age, education, gender, marital status, experience, department, type of organisation and designation on emotional intelligence. The investigator has also examined the difference in the level of role stress experienced by junior, middle and senior-level managers.

The main objective of the study is to examine the relationship between emotional intelligence and organisational role stress. To achieve the main objective, the following specific objectives have been framed:

1. To measure the level of emotional intelligence among industrial managers and to grade them on intrapersonal, interpersonal, adaptability, stress management and general mood dimensions of their emotional intelligence.

2. To measure the organisational role stress experienced by the managers and to portray them on the factors of organisational role stress.

3. To establish the relationship between criterion factors of emotional intelligence and organisational role stress of managers.

4. To check whether emotional intelligence and organisational role stress vary among senior, middle and lower level managers.

5. To explore the variations in emotional intelligence of managers as functions of their personal and organisational factors.
3.2 Hypotheses of the study

Based on review of literature and past studies the following hypotheses have been formulated for verification through empirical investigation:

**Hypothesis 1**

Higher the managerial level, higher is the level of emotional intelligence of industrial managers.

**Hypothesis 2**

Higher the managerial level, lower is the organisational role stress experienced by industrial managers.

**Hypothesis 3**

Higher the emotional intelligence, lower is the organisational role stress experienced by industrial managers.

(a) Higher the Intrapersonal EQ, lower is the organisational role stress experienced by industrial managers.

(b) Higher the Interpersonal EQ, lower is the organisational role stress experienced by industrial managers.

(c) Higher the Adaptability EQ, lower is the organisational role stress experienced by industrial managers.

(d) Higher the Stress management EQ, lower is the organisational role stress experienced by industrial managers.

(e) Higher the General Mood EQ, lower is the organisational role stress experienced by industrial managers.
3.3 Methodology

3.3.1 Universe and respondents of the study

Respondents in this study consist of managers selected from four industrial organisations, two each from Public sector and Private sector. As the main objective of the study is to examine the relationship between emotional intelligence and organisational role stress, the geographical location of the organisations is not expected to make any significant influence in the result. Hence, the organisations selected for the study were from two districts of Kerala for convenience viz., Ernakulam and Trichur. The Fertilizers And Chemicals Travancore (FACT) Ltd, Aluva and The Travancore Cochin Chemicals (TCC) Ltd, Aluva are the two public sector organisations and The Apollo Tyres Ltd, Perambra, Chalakudy and The Binani Zinc Ltd, Edayar, Aluva are the two private sector organisations considered for this study. The common features of these organisations are that these are large and medium sized industrial organisations engaged in manufacturing process. A brief description about the organisations selected for the study is provided below:

**Fertilizers And Chemical Travancore Ltd (FACT)**

FACT is one of the largest central public sector organisations in Kerala engaged in manufacturing of Fertilizers and Chemicals, Caprolactum, and Engineering and Designing works. It was a profit making organisation up to 1995 with a turnover around Rs.2000 crores and total manpower strength of around 9500. The financial performance of the company during the last three years is: 2001-2002, its sales turnover was Rs.978.12 crores with a profit of Rs.0.57 crores. In the year 2002-2003, the sales turnover was Rs.1204.98 crores and it made a loss of Rs.199.93 crores. During the last financial year (2003-2004) its sales turnover was Rs.978.12 crores with a loss of Rs.167.22...
crores. Its total manpower strength during the years 2001-2002, 2002-2003 and 2003-2004 were 6466, 5788 and 4402 respectively (see Table 3.1.1).

### Table 3.1.1

Financial performance and total manpower strength of each organisation

<table>
<thead>
<tr>
<th>Name of the organisation</th>
<th>Sales Turnover in Crores, Rs.</th>
<th>Profit/Loss in Crores, Rs.</th>
<th>Total manpower strength</th>
</tr>
</thead>
<tbody>
<tr>
<td>FACT</td>
<td>978.12</td>
<td>1204.98</td>
<td>978.12</td>
</tr>
<tr>
<td>TCC</td>
<td>109.88</td>
<td>86.72</td>
<td>109.32</td>
</tr>
<tr>
<td>Apollo Tyres</td>
<td>1712.75</td>
<td>2027.01</td>
<td>2221.80</td>
</tr>
<tr>
<td>Binani Zinc</td>
<td>205.47</td>
<td>183.32</td>
<td>198.40</td>
</tr>
</tbody>
</table>

**Travancore Cochin Chemicals (TCC)**

TCC is a medium scale public sector undertaking owned by the state government of Kerala located at Aluva. The company manufactures Chemicals like Caustic Soda, hydrochloric acid, liquid chlorine and sodium hypo chloride. The financial performance of the company during the last three years shows that in 2001-2002 period it made a loss of Rs. 6.67 crores with total sales turnover of Rs. 109.88 crores and in 2002-2003 period it continued to make a loss of Rs. 6.92 crores on a sales turnover of Rs. 86.72. It has succeeded in making a profit of Rs. 0.83 crores with a sales turnover of Rs. 109.32 crores during the latest financial year. Its total manpower strength during the period 2001-2002, 2002-2003 and 2003-2004 are 1199, 952 and 868 respectively (see Table 3.1.1).

**Apollo Tyres Ltd**

It is a large-scale private sector organisation engaged in the manufacturing of automotive tyres with branches in Kerala and Gujarat. Only the unit situated at Perambra, Trichur district was considered for the study. It is a profit making organisation and its financial performance during the last three financial years is: 2001-2002, its sales turnover was 1712.75 crores and made a
profit of 36.81 crores. In the year 2002-2003 its profit was 120.02 crores with 
a sales turnover of 2027.01. During the last financial year (2003-2004) it made 
a profit of 70.42 crores with a sales turnover of Rs 2321.80 crores. Its total 
2002, 2401 and 2538 respectively (see Table 3.1.1)

Binani Zinc Ltd

It is a medium scale private company located at Aluva engaged in 
the production of Zinc, which is used for making Batteries. It is a profit 
making company. In the period 2001-2002 it was profitable with a sales 
turnover was Rs 205.47 crores, but its profit figure was not available 
separately in the Balance Sheet as the Profit and Loss account was prepared 
for the entire group, Binani Industries Ltd. During 2002-2003 period it made a 
profit of Rs 0.80 crores with a sales turnover of Rs 183.33 crores. In the last 
financial year it made an increase in profit with a profit of Rs 1.31 crores and a 
sales turnover of Rs 198.40 crores. Its total manpower strength during the 
respectively (see Table 3.1.1).

3.3.2 Sampling Design

After having selected four organisations for the study, the 
investigator planned to take equal sample size (100) from each of the four 
organisations. However, it was not possible to take equal sample size from 
each organisation as the size of the universe differed substantially. Hence it 
was decided to take equal sample size from the Public sector and Private sector 
organisations. Of the total sample size of 366, 181 (49.5%) is from Public 
sector and 185 (50.5%) is from Private sector organisations. Similarly, it was 
not possible to collect equal sample size from each department namely 
production, maintenance and administration as the size of the universe was
different in different departments. The percentage of respondents from production, maintenance and administration departments is 34.7, 36.1 and 29.2 respectively. The number of respondents from administration was less, as the total number of managers employed in administration department is less compared with other departments. Hence a stratified disproportionate random sampling method was applied to collect data from each organisation.

The final number of respondents from FACT Ltd, APOLLO TYRES Ltd, BINANI ZINC Ltd and TCC Ltd are 105, 99, 86 and 76 respectively. Its frequency chart is given below.

Table 3.1.2
No. of respondents selected from various organisations

<table>
<thead>
<tr>
<th>Organisation</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Public sector</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FACT</td>
<td>105</td>
<td>28.7</td>
</tr>
<tr>
<td>TCC</td>
<td>76</td>
<td>20.8</td>
</tr>
<tr>
<td>Total</td>
<td>181</td>
<td>49.5</td>
</tr>
<tr>
<td><strong>Private sector</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>APOLLO</td>
<td>99</td>
<td>27.0</td>
</tr>
<tr>
<td>BINANI</td>
<td>86</td>
<td>23.5</td>
</tr>
<tr>
<td>Total</td>
<td>185</td>
<td>50.5</td>
</tr>
<tr>
<td><strong>Grand Total</strong></td>
<td>366</td>
<td>100.0</td>
</tr>
</tbody>
</table>

The data collected from FACT Ltd is from its Petrochemical Division, FEDO (Fact Engineering and Design Organisation) and Head office. The size of the universe in each division is 145, 107 and 67 respectively and hence total size of the universe in FACT Ltd is 319. The size of the universe in Apollo Tyres, Binani Zinc and TCC are 227, 109 and 90 respectively. As the size of the universe is different in different organisation, as already mentioned, it was not possible to collect equal sample size from all the organisations. The number of respondents from each category viz, junior, middle and senior level
and their total strength in each organisation are given in Table 3.1.3. ‘N’ represents size of the universe and ‘n’ represents sample size.

**Table 3.1.3**

Size of the universe and sample of respondents from each category of managers

<table>
<thead>
<tr>
<th>Name of Organisation</th>
<th>Junior level N</th>
<th>Junior level n</th>
<th>Middle level N</th>
<th>Middle level n</th>
<th>Senior level N</th>
<th>Senior level n</th>
<th>Total N</th>
<th>Total n</th>
</tr>
</thead>
<tbody>
<tr>
<td>FACT</td>
<td>214 (28.5)</td>
<td>61</td>
<td>86</td>
<td>38 (44.2)</td>
<td>19</td>
<td>6 (31.6)</td>
<td>319</td>
<td>105 (32.9)</td>
</tr>
<tr>
<td>TCC</td>
<td>48</td>
<td>38 (79.2)</td>
<td>32</td>
<td>29 (90.6)</td>
<td>10</td>
<td>9 (90)</td>
<td>90</td>
<td>76 (84.4)</td>
</tr>
<tr>
<td>APOLLO</td>
<td>225 (35.6)</td>
<td>80</td>
<td>26</td>
<td>16 (61.5)</td>
<td>7</td>
<td>3 (42.8)</td>
<td>258</td>
<td>99 (38.4)</td>
</tr>
<tr>
<td>BINANI</td>
<td>40</td>
<td>34 (85)</td>
<td>52</td>
<td>46 (88.5)</td>
<td>17</td>
<td>6 (35.3)</td>
<td>109</td>
<td>86 (78.9)</td>
</tr>
<tr>
<td>ZINC</td>
<td>40</td>
<td>34 (85)</td>
<td>52</td>
<td>46 (88.5)</td>
<td>17</td>
<td>6 (35.3)</td>
<td>109</td>
<td>86 (78.9)</td>
</tr>
<tr>
<td>TOTAL</td>
<td>527 (40.4)</td>
<td>213</td>
<td>196</td>
<td>129 (65.8)</td>
<td>53</td>
<td>24 (45.3)</td>
<td>776</td>
<td>366 (47.2)</td>
</tr>
</tbody>
</table>

*Figures in bracket represent percentage of sample to total

The total number of respondents from junior, middle and senior level is 213, 129 and 24 respectively. The number of respondents from senior level is very less due to the following two reasons: first, the total number of managers belonging to senior level is very less in these organisations and secondly, most of them in this category were not approachable to collect data.

**3.3.3 Process of data collection**

Formal permission was sought from the Head of the Human Resource departments of all the four organisations before starting the data collection. Then each of the respondents was approached personally and the researcher explained to each of them the objective of the study and the method of answering the questionnaires. After handing over the questionnaires they were approached again after a few days, according to their convenience, for collecting it back. Some of the respondents answered all the questions and returned it on the same day while others took a few days to complete it. Out of
the 164 questionnaires distributed in FACT Ltd only 113 were returned. Out of 113 received 8 responses were not used as it was either not filled in completely or not done sincerely. 126 respondents in Apollo Tyres and 95 in Binani Zinc and 82 in TCC were approached and questionnaires were distributed to them. Of this, the number of managers who responded from Apollo Tyres, Binani Zinc and TCC were 104, 89 and 78 respectively. Out of these 5 responses from Apollo Tyres, three from Binani Zinc and two from TCC were discarded as these were either not filled in completely or not done carefully (see details given in Table 3.1.4). Thus a total of 467 managers were approached and a total number of 384 managers filled in the questionnaires. Out of these 18 responses had to be discarded. The overall response is thus 78.37 percent. This high response was possible because of the full-time involvement of the investigator for data collection. Hence a total of 366 responses were thus available for final tabulation and analysis.

Table 3.1.4

<table>
<thead>
<tr>
<th>Organisation wise number of respondents approached and their response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name of the Organisation</td>
</tr>
<tr>
<td>--------------------------</td>
</tr>
<tr>
<td>FACT</td>
</tr>
<tr>
<td>APOLLO TYRES</td>
</tr>
<tr>
<td>BINANI ZINC</td>
</tr>
<tr>
<td>TCC</td>
</tr>
<tr>
<td>TOTAL</td>
</tr>
</tbody>
</table>

3.3.4 Tools used for data collection

Besides the questions on the respondent’s personal and occupational variables, two standard questionnaires have been used for collecting primary data viz., Emotional Quotient inventory (EQ-i) for
measuring emotional intelligence and Organisational Role Stress (ORS) scale for measuring the total role stress of respondents.

3.3.4A Justification for the tools used

There are two models to explain emotional intelligence; the ability model proposed by John Mayer and Peter Salovey (1990) and mixed model developed mainly by Bar-On (1997) and Daniel Goleman (1995). Even though the concept EI was popularised by the Daniel Goleman with the publication of two books viz., Emotional Intelligence and Working with Emotional Intelligence most of the research studies were conducted by Reuven Bar-On. The ability model mainly talks about the perception, appraisal, understanding, analysing and regulation of emotions.

According to Bar-On (1997) emotional intelligence is an array of noncognitive capabilities, competencies, and skills that influence one’s ability to succeed in coping with environmental demands and pressures.

As the main objective of this study is to examine the relationship between emotional intelligence and organizational role stress, the mixed model seems to be the appropriate model.

Based on the mixed model Bar-On (1997) developed an instrument, EQ-i, for measuring emotional intelligence. The validity and reliability of EQ-i are well established (Bar-On Technical Manual, 2002). The following nine types of validity studies were conducted: content, face, factor, construct, convergent, divergent, criterion-group, discriminant, and predictive validity. The internal reliability of EQ-i was also examined by him using the Cronbach alpha (see section 3.3.5.1 for detailed discussion on reliability and validity of EQ-i).
ORS Scale
ORS scale developed and standardized by Pareek (1983) is generally regarded as the best instrument available for measuring the role stress in organizations. The importance of ORS scale in measuring role stress is evident from its application in a number of empirical studies across varied service settings, see, for example, Joshi & Singhvi, 1997, in a study conducted among teachers; Ahmed & Mehta, 1997, in a study conducted among industrial managers; Nath, 1988, in a study among bank employees (see section 3.3.5.2 for detailed discussion).

3.3.4.1 Emotional Quotient Inventory (EQ-i)

EQ-i instrument was developed by Dr.Reuven Bar-On. His efforts to develop a cross cultural approach to describe and assess emotional intelligence has led his research to cross borders into eleven countries including India and hence is suitable to be used in India also.

The Bar-On Emotional Quotient Inventory is designed to measure a number of constructs related to emotional intelligence.

The Bar-On EQ-i consists of 133 items and takes approximately 30 minutes to complete. It uses a five point rating scale ranging from 1= very seldom or not true of me to 5= very often true of me or true of me. The instrument provides a total EQ score as well as the following five EQ composite scale scores based on 15 subscale scores (this is also referred to as the 1-5-15 hierarchical structure of the EQ-i).
The Bar-On EQ-i Composite Scales and Subscales are:

1. Intrapersonal Scales
   a. Self-Regard
   b. Emotional Self-Awareness
   c. Assertiveness
   d. Self-Actualisation
   e. Independence

2. Interpersonal Scales
   a. Empathy
   b. Social Responsibility
   c. Interpersonal Relationship

3. Adaptability Scales
   a. Reality Testing
   b. Flexibility
   c. Problem Solving

4. Stress Management Scales
   a. Stress Tolerance
   b. Impulse Control

5. General Mood Scales
   a. Optimism
   b. Happiness

The questionnaire is given in Annexure I

**Operational definitions of emotional intelligence constructs**

The operational definitions of various emotional intelligence constructs used in the EQ-i as defined by Bar-on (1997) are given below:
Self-Regard

Self-Regard is the ability to respect and accept oneself as basically good. Respecting oneself is essentially liking the way one is. Self-acceptance is the ability to accept one’s perceived positive and negative aspects as well as one’s limitations and possibilities. This conceptual component of emotional intelligence is associated with general feelings of security, inner strength, self-assuredness, self-confidence, and feeling of self-adequacy. Feeling sure of oneself is dependent upon self-respect and self-esteem, which are based on a fairly well developed sense of identity. A person with good self-regard feels fulfilled and satisfied with himself/herself.

Emotional Self-Awareness

Emotional Self-Awareness is the ability to recognise one’s feeling. It is not only the ability to be aware of one’s feelings and emotions, but also to differentiate between them, to know what one is feeling and why, and to know what caused the feeling. Serious deficiencies in this area are found in alexithymic (inability to express feelings verbally) conditions.

Assertiveness

Assertiveness is the ability to express feelings, beliefs and thoughts, and defend one’s rights in a non-destructive manner. Assertiveness is composed of three basic components: the ability to express feelings, the ability to express beliefs and thoughts openly and the ability to stand up for personal rights. Assertive people are not over-controlled or shy. They are able to outwardly express their feelings (often directly), without being aggressive or abusive.
Self-Actualisation

Self-Actualisation pertains to the ability to realise one’s potential capacities. This component of emotional intelligence is manifested by becoming involved in pursuits that lead to a meaningful, rich, and full life. Striving to actualise one’s potential involves developing enjoyable and meaningful activities and can mean a life long effort and an enthusiastic commitment to long-term goals. Self-actualisation is an ongoing, dynamic process of striving toward maximum development of one’s abilities, capacities and talents. This factor is associated with persistently trying to do one’s best and trying to improve oneself in general.

Independence

Independence is the ability to be self-directed and self-controlled in one’s thinking and action and to be free of emotional dependency. Independent people are self-reliant in planning and making important decisions. They may, however, seek and consider other people’s opinions before making the right decision for themselves in the end; consulting others is not necessarily a sign of dependency.

Empathy

Empathy is the ability to be aware of, to understand and to appreciate the feelings of others. It is being sensitive to what, how, and why people feel the way, they do. Being empathetic means being able to “emotionally read” other people. Empathetic people care about others and show interest in and concern for others.
Interpersonal relationship

Interpersonal relationship skill involves the ability to establish and maintain mutually satisfying relationships that is characterised by intimacy and by giving and receiving affection. Mutual satisfaction includes meaningful social interchanges that are potentially rewarding and enjoyable. Positive interpersonal relationship skill is characterised by the ability to give and receive warmth and affection and to convey intimacy to another human being.

Social Responsibility

Social responsibility is the ability to demonstrate oneself as a cooperative, contributing and constructive member of one's social group. This ability involves acting in a responsible manner, even though one may not benefit personally. Socially responsible people have social consciousness and a basic concern for others, which is manifested by being able to take on community-oriented responsibilities.

Problem Solving

Problem solving aptitude is the ability to identify and define problems as well as to generate and implement potentially effective solutions. Problem solving is multiphase in nature and includes the ability to go through a process of (1) sensing a problem and feeling confident and motivated to deal with it effectively (2) defining and formulating the problem as clearly as possible (3) generating as many solutions as possible, and (4) making a decision to implement one of the solutions.

Reality Testing

Reality testing is the ability to assess the correspondence between what is experienced and what objectively exists. Reality testing involves a
search for objective evidence to confirm, justify, and support feelings, perceptions and thoughts. It involves ‘tuning in’ to the immediate situation, attempting to keep things in the correct perspective, and experiencing things as they really are, without excessively fantasising or daydreaming about them. An important aspect of this factor is the degree of perceptual clarity evident when trying to assess and cope with situations; it involves the ability to concentrate and focus when examining ways of coping situations that arise.

**Flexibility**

Flexibility is the ability to adjust one’s emotions, thoughts and behaviour to changing situations and conditions. This component of emotional intelligence refers to one’s overall ability to adapt to unfamiliar, unpredictable, and dynamic circumstances. Flexible people are agile, synergistic, and capable of reacting to change, without rigidity. These people are able to change their minds when evidence suggests that they are mistaken.

**Stress Tolerance**

Stress tolerance is the ability to withstand adverse events and stressful situations without “falling apart” by actively and positively coping with stress. It is the ability to weather difficult situations without getting too overwhelmed. This ability is based on:

(i) a capacity to choose courses of action for coping with stress,

(ii) an optimistic disposition toward new experiences and change in general and towards one’s ability to successfully overcome the specific problem at hand, and

(iii) a feeling that one can control or influence the stressful situations.
Impulse Control

Impulse control is the ability to resist or delay impulses, drive or temptation to act. It entails a capacity for accepting one's aggressive impulses, being composed, and controlling aggression, hostility, and irresponsible behaviour. Problems in impulse control are manifested by low frustration tolerance, impulsiveness, anger control problems, abusiveness, loss of self-control, and explosive and unpredictable behaviour.

Happiness

Happiness is the ability to feel satisfied with one's life to enjoy oneself and others, and to have fun. Happiness combines self-satisfaction, general contentment, and the ability to enjoy life. Happiness is a by-product and/or barometric indicator of one's overall degree of emotional intelligence and emotional functioning. A person who demonstrates a low degree of this factor may possess symptoms typical of depression, such as a tendency to worry, uncertainty about the future, social withdrawal, lack of drive, depressive thoughts, feelings of guilt, dissatisfaction with one's life and, in extreme cases, suicidal thoughts and behaviour.

Optimism

Optimism is the ability to look at the brighter side of life and to maintain a positive attitude, even in the face of adversity. Optimism assumes a measure of hope in one's approach to life. It is a positive approach to daily living. Optimism is the opposite of pessimism, which is a common symptom of depression.
3.3.4.2 Organisational Role Stress (ORS) Scale

ORS scale developed by Pareek, U (1983) was used for measuring organisational role stress. This comprises 50 questions, 5 each for each stressor. The following ten stressors have been considered for preparing the instrument: Inter role distance, Role stagnation, Role expectation conflict, Role erosion, Role overload, Role isolation, Personal inadequacy, Self-role distance, Role ambiguity and Resource Inadequacy.

It is a 5-point scale, indicating how true a particular statement is for the role. The score of each role stress may range from 0 to 4 and the total organisational role stress score may range from 0 to 200.

The ORS scale is given in Annexure II.

Operational definitions of role stress dimensions.

The operational definitions of the ten dimensions of role stress used for the construction of ORS scale by Pareek, U (1983) are given below:

**Inter role distance (IRD)**

This stress is experienced when there is a conflict between organisational and non-organisational role. An individual occupies more than one role. There may be conflicts between two roles he occupies. For example, an executive often faces the conflicts between his organisational role as an executive and his family role as the husband and the father.

**Role stagnation (RS)**

In Role stagnation, the changing demands of the role may produce stress, especially when the role occupant has been occupying another role for a long time, and finds it difficult to make the transition. Role stagnation also includes stress related to career progression. At middle age, and usually at the
middle management levels, a career becomes increasingly problematic and most executives find that their progress slows down. The fear of demotion or obsolescence can be strong for those who know they have reached their career ceiling, and most will inevitably suffer some erosion of status before they finally retire.

**Role expectation conflict (REC)**

This type of stress is generated by different expectations by different significant persons, i.e., superiors, subordinates and peers, about the same role and the role occupant’s ambivalence as to whom to please.

**Role erosion (RE)**

This type of role stress is the function of the role occupant’s feeling that some functions, which should properly belong to his/her role, are transferred to/or performed by some other role. This can also happen when the role occupant performs the functions but the credit for them goes to someone else. Another manifestation is in the form of under utilisation in the role.

**Role overload (RO)**

When the role occupant feels that there are too many expectations from the significant roles in his/her role set, he/she experiences role overload. There are two aspects of this stress: quantitative and qualitative. The former refers to having too much to do, while the latter refers to things being too difficult.

**Role Isolation (RI)**

This type of role stress refers to the psychological distance between the occupant’s role and other roles in the same role set. It is also defined as role distance which is different from inter-role distance (IRD), in the sense that
while IRD refers to the distance among various roles occupied by the same individual, role isolation (RI) is characterised by the feeling that others do not reach out easily, indicative of the absence of strong linkages of one's role with other roles.

**Personal Inadequacy (PI)**

This arises when the role occupant feels that he/she does not have the necessary skills and training for effectively performing the functions expected from his/her role. This is bound to happen when the organisations do not impart periodical training to enable the employees to cope with the fast changes both within and outside the organisation.

**Self-role distance (SRD)**

When the role a person occupies goes against his/her self-concept, then he/she feels self-role distance type of stress. Self-Role Distance is the conflict between the self-concept and the expectations from one's role by other role senders (members of the role set).

**Role ambiguity (RA)**

It refers to the lack of clarity about the expectations regarding the role, which may arise out of lack of information or understanding. It may exist in relation to activities, responsibilities, personal styles and norms and may operate at three stages (i) when the role sender holds his/her expectations about the role, (ii) when he/she sends it, and (iii) when the occupant receives those expectations.

**Resource inadequacy (RIn)**

This type of stress is evident when the role occupant feels that he/she is not provided with adequate resources, such as information, people,
material, finance, facilities etc, for performing the functions expected from his/her role.

3.3.5 Reliability and Validity of Tools

3.3.5.1 Reliability and Validity of EQ-i

Reliability

Reliability indicates the extent to which individual differences in test scores are attributable to "true" differences in the characteristics under consideration and the extent to which they are attributable to chance errors (Anastasi, A & Urbina, S, 2003). The EQ-i is a valid and reliable instrument based on 17 years of research and extensive testing (Bar-On 1997). EQ-i was designed to assess those personal qualities that enabled some people to possess better emotional well-being than others. It has been used to assess thousands of individuals, and its reliability is seen good (Gowing).

The reliability of all the fifteen sub-scales of EQ-i examined by the investigator in this study with the help of SPSS showed acceptable reliability and the values of Cronbach alpha coefficients obtained for each sub-scales are as follows: Emotional Self-Awareness = 0.7060, Assertiveness = 0.6396, Self-Regard = 0.7865, Self-Actualisation = 0.5835, Independence = 0.6027, Empathy = 0.6365, Social Responsibility = 0.5425, Interpersonal Relationship = 0.7791, Reality Testing = 0.7186, Flexibility = 0.6547, Problem Solving = 0.7215, Stress Tolerance = 0.7392, Impulse Control = 0.8001, Optimism = 0.7576 and Happiness = 0.7496.

The reliability measures checked by Sudhakar (2000) in the Indian context also showed significant reliability coefficients, the average Cronbach alpha coefficients being high for all the subscales, ranging from a low of 0.53 (Flexibility) to a high of 0.87 (Stress Tolerance).
Validity

The validity of a test denotes what the test measures and how well it does so. It tells us what can be inferred from test scores. An extensive standardisation and validation process on emotional intelligence and its factorial components has been reported. Nine types of validity studies were conducted: content, face, factor, construct, convergent, divergent, criterion-group, discriminant, and predictive validity (Bar-on, 2002). In one study the EQ-i was predictive of success for U.S. Air Force recruiters. In fact, by using the test to select recruiters, the U.S. Air Force is said to have saved nearly 3 million dollars annually. Also, there were no significant differences based on ethnic or racial group (Bar-On, in press). According to Salovey et al., (1999) the convergent and discriminant validity of EQ-i is found good. Another study (Dawda & Hart, 2000) highlighted that the average correlation between measures of the big five personality factors (i.e., Neuroticism, Extroversion, Openness, Agreeableness, and Conscientiousness) and general EI derived from the Bar-On EQ-i approaches 0.5 showing that it has acceptable validity.

Goodness of Fit of EQ-i

Goodness of Fit of the EQ-i was checked by creating structural equation model and different fitness indices like Normed fit index, Relative fit index, Incremental fit index, Tucker-Lewis index, and comparative fit index were examined. The resultant values of the tests are given in Table 3.1.5. Values of 0.95 and above are generally considered as good. The regression weights of all the subscales of EQ-i toward composite scales, and composite scales toward total EQ are presented in Table 3.1.6. All values are significant at P=0. From the above values it can be said that the relationships between different subscales and composite scales, and composite scales and total EQ are significant and thereby establishing the Goodness of Fit of Bar-On’s model used in this study.
Table 3.1.5
Fit Indices of EQ-i

<table>
<thead>
<tr>
<th>Fit indices</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normed fit index</td>
<td>0.969</td>
</tr>
<tr>
<td>Relative fit index</td>
<td>0.959</td>
</tr>
<tr>
<td>Incremental fit index</td>
<td>0.973</td>
</tr>
<tr>
<td>Tucker-Lewis index</td>
<td>0.964</td>
</tr>
<tr>
<td>Comparative fit index</td>
<td>0.973</td>
</tr>
</tbody>
</table>

Table 3.1.6
Regression coefficients

<table>
<thead>
<tr>
<th>EQ-i composite scales and subscales</th>
<th>Estimate</th>
<th>S.E.</th>
<th>C.R.</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intrapersonal EQ</td>
<td>0.866</td>
<td>0.087</td>
<td>9.980</td>
<td>0.000</td>
</tr>
<tr>
<td>Interpersonal EQ</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adaptability EQ</td>
<td>1.209</td>
<td>0.085</td>
<td>14.269</td>
<td>0.000</td>
</tr>
<tr>
<td>Stress Management EQ</td>
<td>1.229</td>
<td>0.089</td>
<td>13.774</td>
<td>0.000</td>
</tr>
<tr>
<td>General Mood EQ</td>
<td>1.237</td>
<td>0.087</td>
<td>14.279</td>
<td>0.000</td>
</tr>
<tr>
<td>Independence</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-Actualization</td>
<td>1.105</td>
<td>0.107</td>
<td>10.341</td>
<td>0.000</td>
</tr>
<tr>
<td>Self-Regard</td>
<td>1.509</td>
<td>0.134</td>
<td>11.223</td>
<td>0.000</td>
</tr>
<tr>
<td>Assertiveness</td>
<td>1.353</td>
<td>0.132</td>
<td>10.231</td>
<td>0.000</td>
</tr>
<tr>
<td>Emotional Self-Awareness</td>
<td>1.439</td>
<td>0.133</td>
<td>10.838</td>
<td>0.000</td>
</tr>
<tr>
<td>Empathy</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social Responsibility</td>
<td>0.796</td>
<td>0.069</td>
<td>11.561</td>
<td>0.000</td>
</tr>
<tr>
<td>Interpersonal Relationship</td>
<td>1.276</td>
<td>0.088</td>
<td>14.558</td>
<td>0.000</td>
</tr>
<tr>
<td>Problem Solving</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reality Testing</td>
<td>0.974</td>
<td>0.059</td>
<td>16.575</td>
<td>0.000</td>
</tr>
<tr>
<td>Flexibility</td>
<td>0.851</td>
<td>0.067</td>
<td>12.659</td>
<td>0.000</td>
</tr>
<tr>
<td>Stress Tolerance</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Impulse Control</td>
<td>0.812</td>
<td>0.077</td>
<td>10.514</td>
<td>0.000</td>
</tr>
<tr>
<td>Optimism</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Happiness</td>
<td>0.960</td>
<td>0.061</td>
<td>15.662</td>
<td>0.000</td>
</tr>
</tbody>
</table>
3.3.5.2 Reliability and Validity of ORS scale

Retest reliability and validity of ORS scale was checked by Sen (1982) and it showed acceptable reliability and validity. The importance of ORS scale in measuring role stress is evident by its application in a number of empirical studies across varied service settings (Joshi & Singhvi, 1997, in a study conducted among teachers; Ahmed & Mehta, 1997, in a study conducted among industrial managers; Nath, 1988, in a study among bank employees). The reliability measures checked by the researcher in this study for the items meant for all the ten stressors have shown significant reliability coefficients. The average Cronbach alpha coefficients obtained are: Inter role distance=0.7619, Role stagnation=0.6554, Role expectation conflict= 0.7834, Role erosion= 0.6561, Role overload= 0.7724, Role isolation= 0.7154, Personal inadequacy=0.6955, Self-role distance=0.7336, Role ambiguity= 0.8101 and Resource Inadequacy=0.7838.

Validity of ORS Scale

Factor Analysis

Construct validity of the instrument was tested by factor analysis by using the data collected by the researcher from 366 respondents. Table 3.1.7 gives the summary of factor loadings, mentioning the frequency of loadings of .2+, .3+, .4+, .5+, .6+, and .7+.
Table 3.1.7
Summary of Factor Loadings of Role Stress

<table>
<thead>
<tr>
<th>Factors</th>
<th>Frequency of Loadings</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>.2+</td>
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<tr>
<td>1</td>
<td>9</td>
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<td>2</td>
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</tr>
<tr>
<td>3</td>
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<td>4</td>
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<td>5</td>
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</tr>
<tr>
<td>9</td>
<td>6</td>
</tr>
<tr>
<td>10</td>
<td>3</td>
</tr>
</tbody>
</table>

From the values given in Table 3.1.7 it is seen that except factor 6 and factor 10 all other factors have high loadings on role stress. But factor 6 has two high loadings of .7+, two loadings of .2+ and one loading of .3+. Similarly factor 10 has one high loading of .6+, three loadings of .2+ and three loadings of .3+ on role stress. Hence we can conclude that all the factors are important in measuring role stress.

Table 3.1.8 gives the summary of factor loadings of .4 and above of the 10 factors on different role stress dimensions. Factor 1 has high loadings on 5 items of role overload, 3 items of resource inadequacy and one item each of inter role distance (IRD), role expectation conflict (REC), role erosion (RE), role isolation (RI) and role ambiguity (RA). Factor 10 has loading only on one item of inter role distance. From the loading of other factors given in Table 3.1.8 it is seen that the factor loadings to different role dimensions are not in the same sequence as what is given in the scale. However as the main objective of this study is to examine the relationship between emotional intelligence and total organizational role stress by considering role stress as dependent variable it will not affect the result of this
study. But when we use this instrument for studies in which role stress is considered as independent variable and if each factor’s causal relationship with some dependent variable is checked by methods like multiple regression the problem of multicollinearity may arise.

**Table 3.1.8**

**Summary of factor loadings (0.4 and above) on Role Stress Dimensions**

<table>
<thead>
<tr>
<th>Factors</th>
<th>Inter Role Distanc e</th>
<th>Role Stagnati on</th>
<th>Role Expectati on Conflict</th>
<th>Role Erosi on</th>
<th>Role Overl oad</th>
<th>Role Isolatio n</th>
<th>Personal Inadequa cy</th>
<th>Self Role Distanc e</th>
<th>Role Ambigu y</th>
<th>Resource Inadequa cy</th>
</tr>
</thead>
<tbody>
<tr>
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<td>1</td>
<td>1</td>
<td>5</td>
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<td>6</td>
<td>8</td>
<td>10</td>
<td>7</td>
<td></td>
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</tr>
</tbody>
</table>

**3.3.6 Source of Data**

The data used in this study being primary in nature, researcher has chosen to collect data only from the respondents who constitute the primary source. The variables involved in this study are innately personal in concept and content and the responses to the items in the EQ-i and ORS scales are intended to blot out one’s internal thoughts, feelings and experiences rather than what might reflect in outward behavioural expressions. The conceptualisations of the prominent variables thus pre-empt data elicitation from sources other than the respondents. Though an attempt to collect information from multiple sources would have added to the verifiability, such an attempt has been precluded in appreciation of the truly subjective nature of domains on which data are sought.
3.3.7 Pilot study

A pilot study was conducted to check the feasibility of the study among 25 respondents; five from senior level and ten each from junior and middle level executives, before starting the data collection. The study results established strong negative correlation between emotional intelligence and organisational role stress. After the study, the investigator made some minor modifications to some of the questions based on comments from the respondents. Some words used for the construction of certain questions were changed to make it easy to understand. The responses collected for pilot study are not used for the final data analysis.

3.3.8 Tools applied for data analysis

The responses from the respondents were first edited and some of the responses were omitted as these were either not filled in completely or not done sincerely. The valid responses were then coded and entered into the spreadsheet of SPSS 11 (Statistical Package for Social Sciences) software. Most of the data analyses were done using SPSS. Statistical software, AMOS also was used for checking the construct validity of ORS scale through factor analysis and for examining the Goodness of Fit of EQ-i. Out of 133 items in EQ-i, 66 items were negative ones and the answers to these items were transformed into positive by applying formulae in SPSS. The items included in positive impression (PI) and negative impression (NI) scales were avoided and hence only 117 items were finally used for this study. The PI and NI scales check whether respondents tried to make positive and negative impression in their response, which is useful when we measure the emotional intelligence of
people to get the exact EI score. In this study as the main objective of the study was to examine the relationship between EI and organisational role stress, PI and NI scales were not considered. As the number of items asked for each scale was different, the score of each composite and sub-scales were converted into standard scores to get a maximum score of 100 for all the scales and overall EQ score.

Descriptive and inferential statistical tools were used to obtain different measures, coefficients and test results. Statistical tests like F-test, ANOVA, Post Hoc test, scatter plot test, multiple regression analysis, and canonical discriminant analysis were used to establish linkages between predictor variables and dependent variables.

Descriptive measures like Mean and Standard deviation, Standard error, coefficient of correlation have also been used in this study.

3.3.9 Limitations of the study

Like any other research study this study also has some limitations. The following are the limitations of the present study:

i. The study results can be generalised to manufacturing sector only as service sector was not considered.

ii. Only managers were considered for the study, workers were excluded.

3.3.10 Chapterisation scheme

This thesis is presented in seven chapters. The first chapter gives an introduction to the topic and it talks about the relevance of the study in the present complex industrial scenario.

The second chapter gives the theoretical framework of the study. It is divided into four parts. Part I explains what are emotions, why emotions are important in workplace, roots and history of emotional intelligence, and
different models of emotional intelligence. It also discusses briefly the
different instruments used for measuring EI and whether EI can be developed.
Part II attempts to explain the concepts of stress and what is organisational role
stress. Part III tries to give a brief theoretical framework on emotional
intelligence – stress relationship and Part IV contains a review of literature on
the topic.

Chapter 3 presents the objectives and hypotheses of the study. It
also discusses the methodology adopted for conducting the study, its
limitations and chapterisation scheme of the report. The fourth chapter gives
the results of the analysis of data to examine the influence of personal and
organisational variables on emotional intelligence and a discussion on it.
Chapter 5 looks into the difference in the organisational role stress experienced
by different levels of managers by analysing the data on organisational role
stress of managers.

Chapter 6 gives the results and discussion of the analysis of data to
examine the main objective of the study, viz., the relationship between
emotional intelligence and organisational role stress of managers. The last
chapter presents the findings, conclusion and implications of the study.