Is age a good predictor of emotional intelligence – a case study among private sector employees

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Abstract

Emotional Intelligence (EI) has become one of the frequently researched topic of today's world. It starts off with the understanding on intelligence but goes on to be applied in the world of business. Research shows that EI predicts success in the workplace. It is more important than Intelligence Quotient (IQ). It is believed that IQ is required at the entry level but EI brings success, builds team, resolves conflict, prepares one for leadership, helps managers to overcome the dark spots of their career and many more. But a pertinent question that comes is which are the different factors that may predict or influence EI. If they can be identified then EI may be taught. In the quest of understanding which factors may contribute to EI, this paper makes an empirical analysis of age as a predictor of EI taking a sample of 80 private sector employees. It has been found that age does predict EI. Thus, EI develops with age.

Keywords: Emotional Intelligence (EI), age, correlation, private sector employees, success.

1. Introduction

The ability to express and control our emotions is essential, so is our ability to understand, interpret, and respond to the emotions of others. Scientists refer to this ability as emotional intelligence (EI). Many authors even suggest that it is more important than IQ in your overall success in life (Goleman, 1998). Since 1990, when Peter Salovey and John D. Mayer originally conceptualized EI (Salovey and Mayer, 1990), research on emotional intelligence have been increasing day by day. After much research, they went on to redefine EI (Mayer & Salovey, 1997). Goleman (1995) popularized this concept of EI in the world of business. In India, one of the early studies was attempted by Prof. N. K. Chadha (Singh, 2003). After a national level interactive seminar, Dr. Dalip Singh (2003) defined EI as a construct having three psychological dimensions: emotional competency, emotional maturity and emotional sensitivity. Since then numerous researches have taken place in India and abroad on EI and its relationship with various other factors and constructs. This paper analyses the relationship of EI with age of individual respondents from private sector organizations in order to test whether age predicts EI and if so to what extent.
2. Objectives

The objectives of this study have been laid down as follows:
a) To gather research findings which have analysed the relationship between age and EI; and
b) To study empirically whether age predicts EI with a sample of 80 private sector employees.

3. Methodology

3.1 Basic Question Identified

There are several factors which seem to influence or rather predict EI. These factors are education, training, personality etc. Many differ in their findings of their studies. But for this empirical study the basic question that has been identified at the advent of the study is as follows:
a) Whether age influences EI of an individual; and if so, to what extent?

3.2 Hypotheses

After identifying the research question and determining the objective of the study, the following hypotheses have been constructed:

$H_0^1$ - There exists no significant relationship between EI and age of the respondents;

$H_0^2$ - There exists no significant difference between mean scores of emotional intelligences of Group I and Group II respondents based on age; and

$H_0^3$ - There exists no significant difference in the $i$-th item of emotional intelligence between Group I and Group II respondents based on age.

All of the above hypotheses have been tested with the help of structured questionnaire that was administered among the respondents.

3.3 Sample Selection

To carry out the study with the above mentioned objective private sector employees have been selected as sample. The private sector world is a difficult place to work in where daily all the faculties of a human being are tested. The sector is characterized with constant change, diverse workforce, tremendous pressure to meet targets, globalized mindset and many more. So, it is challenging to survive in private sector in India, while climbing the corporate ladder is so much more. With just a small percentage of government jobs available India, the larger workforce is represented by private sector employees. So, this study has been conducted on 80 private sector employees. More questionnaires were sent out but 80 were finally selected as these questionnaires were more than 85% complete in all respect.

3.4 Collection of Data

Structured questionnaire (Singh, 2003) on EI was given to the respondents which they were expected to fill up and return. Many filled up questionnaires were not considered for this study as...
sufficient information were not provided by the respondents; some of them even refused to fill up any questionnaire; while some of them showed great interest at the beginning of the study but later did not return the filled up questionnaire. Finally, 80 questionnaires were received and the study was conducted taking those respondents.

3.5 Statistical tools and techniques

Data have been analysed with the help of Statistical Package of Social Sciences (SPSS). Correlation, regression analysis, t test and Mann-Whitney’s non-parametric tests have been applied to analyse the data.

4. Literature review

Early on, scholars like Binet (1916) defined intelligence as purely intellectual capacity. But way back, Thorndike (1920) identified a dimension of intelligence, which he called social intelligence. Spearman (1927) postulated the existence of a general factor (or g factor) and a specific factor (or s factor) underlying intelligence. Thurstone (1938) suggested the existence of a dozen of intelligences. Weschler (1940) indicated the existence of non-intellective abilities in the sphere of intelligence. More recent research by Gardner (1983) has pointed to the existence of seven different types of intelligence. Sternberg (1985) argued for three fundamental aspects of intelligence such as analytic, creative and practical. It is said that the first theory of EI was proposed by an Israeli scientist Reuven Bar-On (1988), though he did not formally use the term ‘emotional intelligence’. Salovey and Mayer (1990) were the first to use the term ‘emotional intelligence’ in public. Their theory of EI integrates key ideas from the fields of intelligence and emotion. Goleman (1995) put together research in neurophysiology, psychology, and cognitive science and applied the concept of emotional intelligence in the world of business. Singh (2003) defined it as the ability of an individual to appropriately and successfully respond to a vast majority of emotional stimuli being elicited from the inner self and immediate environment.

It is evident that the construct of EI has undergone immense change over the years. More and more researches were carried out. Many of them focused on relationship between EI and age. Taking a sample of 60 IAS officers of Assam cadre, Rajkhowa (2002) explored the relationship between age and EI. Atkins and Stough (2005) in their seminal paper argued that certain components of EI may increase with age, not the EI as a whole. Fariselli et. al. (2008) in their study found age significantly contributed to EI. Singh and Kumar (2009) in their study noted that, EI of leaders (as perceived by self and others) consistently increased with age (from 24 to 45 years) but after reaching its peak at 45 years it declined in the fifth and sixth decade of life due to the decline in the self-awareness competencies among older leader’s. Shipley et. al. (2010) studying EI and academic performance found no relationship between EI and age. On a sample of 132 students, Nasir and Masrur (2010) found significant correlation between EI and academic excellence but did not find any statistically significant relationship between age and EI. So, there are conflicting results available from various research works. In context such as this, this paper sets out to analyse empirically whether age predicts EI taking a sample of 80 private sector employees.
5. Analysis and discussion

The respondents were distributed from age 20 to age 50 with a range of 5 years. So, it is evident from Table 1 that 46% respondents were within the age group of 30-35. A total of 24 of them were below the age 35 while 19 of them were above the age 35. Mean age of the respondents was 38.

Table 1: Distribution of Age of Respondents

<table>
<thead>
<tr>
<th>Distribution</th>
<th>No of Respondents</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>20-25</td>
<td>8</td>
</tr>
<tr>
<td>2</td>
<td>25-30</td>
<td>16</td>
</tr>
<tr>
<td>3</td>
<td>30-35</td>
<td>37</td>
</tr>
<tr>
<td>4</td>
<td>40-45</td>
<td>18</td>
</tr>
<tr>
<td>5</td>
<td>45-50</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>80</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: Primary data

When their EI was mapped it was found that 24% of them had very high level of EI while 46% of them had high level of EI. Therefore, 70% of the respondents had very high and high level of EI. Moderate EI was possessed by 28% of the respondents. This is shown in Table 2.

Table 2: Distribution of EI of Respondents

<table>
<thead>
<tr>
<th>Distribution</th>
<th>No. of respondents</th>
<th>Percentage</th>
<th>Score</th>
<th>Percentile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very high EI</td>
<td>19</td>
<td>24</td>
<td>285 and above</td>
<td>P-90</td>
</tr>
<tr>
<td>High EI</td>
<td>37</td>
<td>46</td>
<td>250 – 284</td>
<td>P-75</td>
</tr>
<tr>
<td>Moderate EI</td>
<td>22</td>
<td>28</td>
<td>200 – 249</td>
<td>P-50</td>
</tr>
<tr>
<td>Low EI</td>
<td>2</td>
<td>2</td>
<td>150 – 199</td>
<td>P-40</td>
</tr>
<tr>
<td>Try again</td>
<td>Nil</td>
<td>N.A.</td>
<td>149 and below</td>
<td>P-15</td>
</tr>
<tr>
<td>Total</td>
<td>80</td>
<td>100</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Primary data

To assess if there is any relationship between EI and age, Pearson’s correlation coefficient (r) has been calculated. It is shown in Table 3.
Table 3: Correlation between EI and Age

<table>
<thead>
<tr>
<th></th>
<th>Age</th>
<th>EI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>Pearson Correlation</td>
<td>1.000</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>--</td>
</tr>
<tr>
<td>EI</td>
<td>Pearson Correlation</td>
<td>0.257*</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>0.021</td>
</tr>
</tbody>
</table>

*Correlation is significant at the 0.05 level

The first row gives the correlation (i.e. value of $R$) between the independent variable or predictor (henceforth used interchangeably) and the dependent variable or outcome (henceforth used interchangeably). Here age and EI are taken to be independent and dependent variables, respectively. Correlation ($r$) between EI and age is found to be 0.257. The next row gives the significance of correlation coefficient. It is unlikely that the value of $r$ would be 0.257 if there is no linear correlation between EI and age. The table further indicates that the correlation is statistically significant at 95% confidence level ($p < 0.05$). It may be inferred that with an increase in age there is increase in EI level of the respondents. The above analysis clearly shows that there is statistically significant relationship between EI and age. Therefore, the first null hypothesis that there exists no significant relationship between EI and age of the respondents is rejected.

One might expect that in normal circumstances EI would be enhanced with the increase in age. Age teaches one to handle pressure, develop patience, manage conflicting situations and difficult people etc.; and in the process one becomes more and more mature and attains rich knowledge of self and others. When faced with crucial circumstances, one may take time to think and respond instead of reacting instantaneously. Life experiences, various relationships, responsibilities etc. help one to tactfully use the emotional side of life. But at the same time, it is also true that age alone should not determine EI of an individual. Therefore, it is quite expected that the correlation between age and EI should not be 1. This is what has been found from the value of $r$ from table 4.

Since a significant degree of association exists between the two variables, further investigation has been made whether the association is strong enough to predict or estimate the value of EI based on age, and if so, to what extent. For this purpose, simple regression analysis is used. In the following exercise EI is taken to be dependent on age i.e. age is taken as independent variable whereas EI is taken as dependent variable.

In the Table 5, the simple correlation coefficient between the predictor and the outcome is shown by $R$. This is the value of $r$ already calculated from Table 4. The next column indicates the value of coefficient of determination ($R^2$). It indicates the proportion of variance in dependent variable (EI) which may be explained by the independent variable (age). The value of $R^2$ is found to be 0.066. In other words, age explains 6.6 per cent of variance in emotional intelligence of the respondents. However, $R^2$ tends to somewhat overestimate the success of a model when applied to the real
world. So, an Adjusted $R^2$ value is calculated which takes into account the number of variables in a model and the number of observations the model is based on. This value gives more useful measure of success. In case of Table 5, the difference between $R^2$ and Adjusted $R^2$ is 0.012 or 1.2 per cent (i.e. 0.066 – 0.054). This measure of shrinkage indicates that if the model were derived from the population rather than the sample, it would account for approximately 1.2 per cent less variance in the outcome i.e. EI. The higher the coefficient of determination, the lower is the standard error; and the predictions are likely to be more accurate. The $F$ value is found to be 5.538 which is associated with low $p$ value($< 0.05$) indicating the statistical significance of the exercise.

### Table 5: Model Summary

<table>
<thead>
<tr>
<th>R</th>
<th>$R^2$</th>
<th>Adjusted $R^2$</th>
<th>Change Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>$R$ Square Change</td>
</tr>
<tr>
<td>0.257a</td>
<td>0.066</td>
<td>0.054</td>
<td>0.066</td>
</tr>
</tbody>
</table>

*a. Predictors: (Constant), Age  
b. Dependent Variable: Emotional Intelligence (EI)*

There are conflicting results available from various research studies relating to relationship between EI and age. A set of studies have shown that age predicts a portion of EI though such prediction is not a considerable one. On the other hand, other studies (including at least one in India) have not found any significant correlation between them (Rajkhowa, 2002). As one delves into the literature it is found that EI is about using emotional abilities to solve problems and win relationships. Such abilities do not always automatically develop with age. One must learn to identify and develop abilities such as being aware of what one is feeling, managing a host of emotions that are felt and expressed in oneself and by others, tactful response to situations etc. It is generally believed that individuals depend greatly on their experiences to manage relationships and situations around them. But over-reliance on experience may lead one to handle present or future situations based on some past similar events. There are many other factors, taken together, that may contribute to the development of EI such as socio-economic background, educational qualifications, situations in which one works, behaviour of the colleagues, degree of challenge and stress involved in a job etc. Therefore, it is obvious that age alone cannot fully predict EI. This is well reflected from the last exercise. The next part of the analysis is concerned with the parameters of the last exercise.
Table 6: Coefficients

<table>
<thead>
<tr>
<th></th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>T</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>231.51</td>
<td>15.50</td>
<td>13.00</td>
<td>0.000</td>
</tr>
<tr>
<td>Age</td>
<td>0.83</td>
<td>0.31</td>
<td>0.257</td>
<td>0.021</td>
</tr>
</tbody>
</table>

a. Dependent Variable: Emotional Intelligence

Constant refers to Y intercept, the height of the regression line when it crosses the Y axis. In other words, this is the predicted value of emotional intelligence when all other variables are zero. The third column indicates the values of coefficients (b) for the regression equation for predicting the dependent variable from the independent variable. The simple regression equation may be presented as follows:

\[ Y = b_0 + b_1 (X_i) \]  

In this particular model, Y refers to the dependent variable i.e. EI while X refers to the predictor or independent variable i.e. age. \( b_0 \) refers to a constant which is also known as the Y intercept (the value here is 231.51). \( b_1 \) refers to the slope of the regression line (0.831). Since the value is positive (0.831) it shows a positive relationship between age and EI. Beta denotes the standardized coefficient. This is the value of r as determined by the measure of Pearson’s correlation. This value is obtained by standardizing all variables in a regression. Usually larger beta values are associated with larger t-values and lower p values. In the exercise explained above the beta value is not so high but it is associated with low p value (<0.05) which is found to be statistically significant. Thus, if a respondent’s age is 50 which is the independent variable then his measure of EI is estimated as:

\[ Y \text{ estimated} = 231.51 + 0.831(50) = 273.06 \]

where, \( Y = \text{Measure of EI}; b_0 = 231.51; b_1 = 0.831 \) and \( X \) (age) is 50;

EI may be developed by upgrading one’s emotional skills. EI is not inherited i.e. not fixed at birth. Scientists have not yet discovered an ‘emotional intelligence’ gene. It is something that one needs to learn and develop. Human beings are not all created emotionally equal: all have unique and different temperaments. The way one feels, understands and responds differ significantly from that of others. This is what makes the realm of EI such an interesting area of research. It has been revealed that emotional development starts early in life and is closely related to the general development of a child. Healthy emotional development of children is vital to both abilities to learn, when young, and to their success and happiness as adults. Experience shows that in
underdeveloped and developing countries, particularly in India, emotional development of children has by and large been neglected. As a result, children often bear the brunt of emotionally unskilled and immature parents, rigid cultures and arbitrary religious practices. Childhood is the unique time when a child’s mental frame may actually be built by parental examples. Parents have a role in nurturing emotional intelligence in their children. In most countries, traditional education has tilted towards academic excellence which is a definite asset to a child. But to excel in life, a child needs to develop emotionally intelligent skills and behaviours. Traditional education has failed to teach and prepare children in this area. As a result, the child faces a great deal of emotional pressure and frustration. The child needs to be carefully taught how to recognize a host of emotions that are within him or her and also are communicated through conversations and body languages from others. As the child is able to recognize and distinguish between various emotions, he becomes more and more self-aware. A part of self-awareness comes as a result of progress in age. Thus, EI is learnt and developed over time. In a normal course, EI tends to increase as one learns to be more aware of one’s emotions, to effectively handle distressing emotions, to listen and empathize; in short as one becomes more mature the level of EI increases. To a large extent, maturity itself describes this process of becoming more intelligent about one's emotions and relationships. Therefore, it is quite expected that there should be a positive correlation between EI and age. This has been found from the present study. It has also been found that age contributes to development of EI of the respondents. Though the degree of prediction noted in the study is not very high but it is statistically significant.

This observation is further supported when the set of present data have been made subject to further analysis in which the respondents have been divided into two groups: Group I (consisting of respondents with mean age which is 38 and below mean age) and Group II (consisting of respondents above mean age). This is done in order to check if any significant difference exists between the mean EI of the two groups. For this purpose, $t$ test has been used.

**Table 7: Comparison between Group I and Group II(based on age) respondents in relation to EI**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Group I (upto 38 yrs.)</th>
<th>Group II (above 38 yrs.)</th>
<th>$t$ value</th>
<th>$P$ value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>233.78</td>
<td>243.71</td>
<td>2.23</td>
<td>&lt; 0.05</td>
</tr>
<tr>
<td>SD</td>
<td>18.89</td>
<td>19.70</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

It is observed from table 7 that the $t$ value of 2.23 (associated with lower $p$ value i.e. $<$0.05) indicates that there exists a significant difference between the means on the variable of EI across age. This leads to rejection of second null hypothesis that there exists no significant difference between mean scores of emotional intelligences of Group I and Group II respondents based on
It is noticed from table 7 that the average age and SD of the older group (Group II) is 243.71 and 19.70, respectively, while the same for younger group (Group I) is 233.78 and 18.89, respectively. This indicates the development of EI with age, although the scores of both the groups fall in the moderate EI category which falls under percentile rank of P-50. As age is able to predict statistically significant portion of the variance in EI, the analysis may be used to conclude that EI develops over age.

From the above analysis it is clear that there lies significant difference between means of EI across age. But the result is based on overall or composite score of the variable. It would be interesting to investigate if there exists any item wise difference in relation to age between the groups. For this purpose, Mann-Whitney’s non-parametric test has been applied. All the items (here taken as variables) of EI are taken into consideration in place of overall score of EI.

<table>
<thead>
<tr>
<th>Table 8: Test Statistics*</th>
<th>VAR03</th>
<th>VAR06</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mann-Whitney U</td>
<td>586.000</td>
<td>440.000</td>
</tr>
<tr>
<td>Asymp. Sig (2-tailed)</td>
<td>0.047</td>
<td>0.039</td>
</tr>
</tbody>
</table>

It may be noted from table 8 that the third and the sixth items of EI, as originally given in the questionnaire on EI (Singh, 2003) are found to be statistically significant at 95 per cent confidence level. This observation leads to the rejection of the third null hypothesis that there exists no significant difference in the i-th item of emotional intelligence between Group I and Group II respondents based on age. The result is consistent with that obtained from the t test in the sense that in case of two items there is statistically significant difference across age. There are other items that were found to be statistically significant at 90 per cent confidence level but they are not highlighted as 95 per cent confidence level has been maintained throughout the analysis in testing all the hypotheses. Taking a closer look at the items of EI that have emerged statistically significant across age, it shows that the respondents are able to avoid ego problems and maintain healthy interpersonal relations with others. It has been mentioned earlier that with progress in age people tend to become more patient with themselves and others. They tend to be concerned with important things and become oblivious to petty matters of life. They tend to take time before responding to a particular situation and to people’s opinions and responses. Growth in the realm of emotional intelligence with age helps them to nurture a healthier emotional life. As a result, they seem to have higher control over their emotions. They tend to be far more composed and collected than the younger ones. Generally, people at this stage show tendency to be more accommodating. Therefore, it is quite unlikely that ego problems would so easily destabilize their emotional lives and stability and eventually their social interactions. All these might have contributed to the significant difference in this item. The sixth significant item shows that the respondents are comfortable in conveying their own ideas to others. To put it differently it may be said that the respondents, as they work with varied groups of people, are not only comfortable...
with themselves but also with others in communicating, conveying ideas, views etc. to their workers. Being comfortable with people is definitely an emotionally intelligent skill. Many people have great ideas but not all are skilled or competent enough to let such ideas percolate down their teammates. So, this analysis shows that with age this competence tends to develop.

6. Conclusion

From the above study it is clear that EI develops over age. In other words, age statistically predicts value of EI in an individual. There are other factors which will contribute to the EI; but age is statistically correlated with increase of age. This disproves the myth that EI is fixed at birth; it paves way for development of EI.

7. References


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