EMOTIONAL INTELLIGENCE AND LIFE ADJUSTMENT:  
A validation study

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SSE/EFI Working Paper Series in Business Administration No 2001:8  
October 2001
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Abstract

Emotional intelligence was hypothesized to be a factor in successful life adjustment, among them the successful achievement of a well balanced life with little interference between work and family and leisure. Data from a sample of 153 respondents who were roughly representative of the population were obtained, including measurement of emotional intelligence, life/work balance and other indices of adjustment and social/psychological skills, and salary. EI was measured both by questionnaire items and a task of identifying emotions in social problem episodes as described in vignettes. Balance was measured both in terms of family/leisure interfering with work and vice versa. Both interference dimensions correlated strongly with emotional intelligence in the hypothesized direction. Emotional intelligence was positively related to salary both for men and women, and at different levels of educational achievement. Other indices of skill were also related to EI. On the other hand, those high in EI tended to be less concerned with economic success.

Key words: Emotional intelligence, life/work balance, economic success

Emotional intelligence (EI) has recently been suggested to be a factor of paramount importance in adjustment to life in general, and to work and work performance in particular (Goleman, 1995, 1998). Several ways of measuring the concept have been devised (Sjöberg, 2001). One approach is the use of questionnaire items measuring such dimensions as alexithymia, empathy and self actualization. This methodology was applied in a previous studies of EI where it was found that it was psychometrically feasible and gave promising results with regard to validity beyond what could be obtained with the usual Five Factor Model (McCrae & Costa, 1987) dimensions (Sjöberg, 2001). The best known questionnaire type measure of EI is the Bar-On test (Bar-On, 1997). This approach will here be called the questionnaire approach to measuring EI.
Another major approach to EI, called here the performance approach, has been de-
vised by Meyer, Caruso and Salovey, the MEIS scale (Mayer, Caruso, & Salovey, 1999). In this approach, EI is measured by means of
judgment tasks, where testees are instructed to judge emotions expressed in e.g.
music or art samples, or in social episodes. The “correct” response is usually scored
by means of a consensual key established on the basis of norm data or data in an
experimental group. In other words, the modal response is scored as “correct”. The
reliabilities of this type of measurement have been somewhat problematic to establish
but most often they are acceptable, even if lower than for usual ability tests of the cor-
responding length. Few studies have compared the questionnaire and performance
measures of EI, but Sjöberg found, in two studies (Sjöberg, 2001, manuscript), some
degree of convergence, even if it was low. The performance approach is still in an
experimental stage.

EI has so far been relatively little validated and investigated beyond laboratory tasks
or in special groups, such as college students, where information on various adjust-
ment dimension has been scarce, see Sjöberg (Sjöberg, 2001) for a review. The pur-
pose of the present study was to assess the validity of the EI construct on a relatively
wide array of criteria, and to do so in a reasonably representative sample of the popu-
lation rather than in convenience samples. The study also used a design which guar-
anteed anonymity to respondents and made it less likely that they should give tactical
responses. The general considerations behind our choices of criteria will now be dis-
cussed, before a report the empirical results.

The present study operationalized EI in two ways. First, a number of personality di-
mensions had earlier been found to form a super-factor which could be interpreted as
EI, and showed convergence with performance EI and some other personality dimen-
sions, as well as incremental validity beyond what could be obtained by means of the
Five Factor Model. These dimensions were measured in the present study as well.
Second, performance EI was measured by means of a shortened version of a social
episodes test. This test had been used in previous work (Sjöberg, 2001, manuscript).
It is only one aspect of the broad sample of performance measures used in the MEIS,
but practical considerations made it impossible to incorporate more of the MEIS ideas
in the present survey design.

Most work on EI has been carried out in academic settings and with students as par-
ticipants, or by consultants in industrial settings. The former approach is unsatisfac-
tory since students are a highly select group of people, and the latter tends not to be
documented in scientific journals but
in institutional reports, if at all. In the present study, I approach a very diversified
group of adults with considerable work experience.

Criteria

Several criteria were measured in order to validate the EI scales in as broad a man-
ner as possible.
Background data. It was hypothesized that EI would be higher for women than for men (cp. (Barrett, Lane, Sechrest, & Schwartz, 2000)), and positively correlated with educational level. Age was hypothesized to be negatively related to EI, just as it is to other indices of achievement and performance, even if older people often can compensate well in certain tasks for a decline in basic neural efficiency (Baltes, Dittman-Kohli, & Kliegl, 1984).

Personality and attitude constructs. EI should be related to a number of personality constructs, either because it is a precursor of successful achievement or because it is itself caused by a high level of functionality which is implied by some other personality factor. It was therefore hypothesized that EI would be positively related to self esteem and to persistence in the face of failure, and that it would be negatively related to a tendency to shun from the inner psychological world, here called psychophobia. It should be positively related to creativity.

Work related criteria. One major life adjustment aspect is the balance, or lack thereof, of work and life outside work, i.e. family and leisure (Lobel, 1991; Lobel & St. Clair, 1992). A balanced life is held to be highly desirable, but may not be easy to achieve in times of stress and burnout, great demands on time from e.g. commuting to work and leaving and fetching children at the day-care center, etc. It is common to hear complaints about time stress and difficulties in achieving the good life one strives for, and the issue is in focus in current debate (Hobson, Delunas, & Kesic, 2001). It should be noted that few men or women in Sweden are full-time home makers and that consequently there are great time restrictions on their lives in the case that they have formed families and have children.

These problems of balance are partly due to structural conditions beyond the control of the individual, at least under restrictions that may be very hard for him or her to remove. Life in a big city involves much commuting time for most of its workforce, for example. But some of the problems may well be assumed to reside in the individuals themselves. Hence, it is reasonable to assume that high EI people cope more successfully with the conflicts arising from modern work and family life (Heiliger & Hingstman, 2000).

High EI should bring tangible rewards in the job context. In particular, we expect those high in EI to achieve more and to get a higher salary, at a constant level of education and for men and women separately. People with a high EI should also be better adjusted in work life and value their jobs more positively. Work motivation should also be positively related to EI, and so should job satisfaction.

The successfully adjusted, high EI person should have been able to find a job which motivates him or her and which he or she finds satisfying. Hence, it is hypothesized that EI is positively related to work motivation and job satisfaction. On the other hand, the high EI person should be less likely to give very high priority to economic values.

Summing up, EI was hypothesized to relate positively to
- level of education
- self esteem
- persistence in the face of failure
- creativity
- good life/work balance
- salary level
- work motivation
- job satisfaction.

EI was also expected to be related to

- gender, women being higher in EI than men.

Furthermore, EI was hypothesized to be negatively related to

- age, younger people being higher in EI
- psychophobia
- giving priority to economic values.

Method

Questionnaire. The questionnaire was quite extensive, 34 pages in A4 format, and a total of 750 questions. It opened up with some questions about general political attitudes (not reported here), followed by questions about economic status. Then followed items intended to measure psychophobia, 10 problem episodes involving 2 actors and 10 emotion judgments for each, the main questionnaire items needed to measure EI and creativity, questions about work motivation and life/work balance, 22 job risk items (not reported here), and 24 items measuring reactions to failure and frustrations. Finally, a number of questions concerning background data and evaluation of the questionnaire were included, and space was provided for free comments on the study.

Time to complete the questionnaire was 60 minutes (median), varying between 30 and 240 minutes.

The quality of the design and questionnaire was rated on 9 scales, on the whole positively, by the participants, who found it clear and easy to follow (about 90%), meaningful (71%) and interesting (63%). Few had become worried about its risks (6%), but also few had become interested in getting more information about its topics (19%). Most respondents did not feel that the questionnaire was designed to influence their responses in some specific direction (65%).

Subjects. The questionnaire was sent to 196 persons; 153 (78%) had responded after two reminders. The respondents were persons who had earlier taken part in our survey research and then indicated that they were willing to participate in yet another study. It is our experience from earlier research that such a group resembles the general population, as far as can be ascertained, quite well (Viklund, 1999).
Ninety-four of the respondents were men (61.4%), 59 women; 17% were singles. Age varied from 22 to 77 years, median 49. Many, 77.1%, had children of their own. College education was reported by 32%, about 14% higher than in the population. Grade school or the equivalent was reported by 23.6%, the others were in between in educational level, which was hence quite varying. Orientation of education beyond grade school was dominated by four groups: health (17%), humanistic subjects (22%), technology (13%) and trade/economics (18%). The proportion of respondents employed full or part time was 63.4%, 10.5% were retired and only 2.6% unemployed. The proportion of full-time students was only 3.3%. Only 20.3% lived in one of the four largest cities in the country, the rest were spread over rural areas or small towns. Median salary was 18,700 SEK/month\(^2\), varying between 7,600 and 80,000. The proportion who did not state their income was 13.1%.

Daily commuting time to work (both trips summed) varied between 5 (or less) minutes and 150 minutes, median 30 minutes.

Summing up, the group was roughly representative of the population with one clear exception: the average level of education was too high. On the other hand, this variable is usually not of major importance and, in addition, we did have a special interest in respondents with a high level of education. It should also be noted that the respondents varied very strongly in background data, and that very few were students.

Scale construction. Reliabilities were estimated by means of Cronbach’s alpha (Cronbach, 1951). The empathy (Hogan, 1969) scale of Mehrabian and Epstein (Mehrabian & Epstein, 1970) was used (present alpha=0.80, 33 items), as well as the Jones and Crandall scale of self actualization (Jones & Crandall, 1986) (present alpha=0.67, 15 items). Furthermore the alexithymia scale of Bagby, Parker & Taylor (Bagby, Parker, & Taylor, 1994) was translated and employed here (present alpha=0.84, 20 items), measuring ability to identify and describe feelings, as well as a tendency to shun away from emotional dimensions in thought and social relations. Roger and Najarian (Roger & Najarian, 1989) described a set of items measuring four aspects of emotion control, we used those measuring emotional inhibition (alpha=0.73, 15 items). Nineteen of the items of the scale of Machiavellianism (Christie & Geis, 1970), and 6 additional items written for the present study, were used (present alpha including the new items=0.73). This scale measures a cynical and manipulative attitude and has been found to be a negative indicator of EI (Sjöberg, 2001).

Several scales were taken from current research in our unit: a belief than one is needed at the workplace (4 items, alpha = 0.84), mental energy and work motivation (Sjöberg & Lind, 1994), 11 items with an alpha=0.92, creativity (23 items and alpha=0.78) introversion and social indifference (14 items, alpha=0.82), aggression (0.61, 4 items), emotional inhibition (0.65, 4 items), and social isolation (0.60, 4 items). A self esteem (0.79, 8 items) was included. Life/work balance was measured by two separate scales: work interfering with leisure/family (0.91, 11 items) and leisure/family interfering with work (0.88, 6 items). Psychophobia was measured with 14 items, and an alpha of 0.78. Persistence in the face of failure was measured with 24 items and an alpha of 0.86. Job satisfaction was measured with two questions which
were pooled for the analysis. The Crowne-Marlowe scale of social desirability (Crowne & Marlowe, 1960) was also used, 32 items with an alpha of 0.79.

The items were presented in random order. They were judged on a four-point response scale with the items "agree absolutely", "agree to some extent", "disagree to some extent" and "disagree absolutely".

The 10 indices mentioned above were standardized to z-score format and then pooled (averages) after appropriate reversals for each individual to a final score measuring EI, which had an alpha of 0.87. The intercorrelations of the indices are given in Table 1.

| Table 1. Intercorrelations of the indices used in the questionnaire scale of EI. Scales have been reversed when needed in order to yield a score in the direction of high EI. |
|---------------------------------|------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Alexithymia                     | 1.00             |                 |                 |                 |                 |                 |                 |                 |                 |
|Introversion                    | 0.71             | 1.00            |                 |                 |                 |                 |                 |                 |                 |
|Fatalism                        | 0.58             | 0.54            | 1.00            |                 |                 |                 |                 |                 |                 |
|Self actualization              | 0.67             | 0.67            | 0.39            | 1.00            |                 |                 |                 |                 |                 |
|Machiavellianism                | 0.64             | 0.65            | 0.54            | 0.48            | 1.00            |                 |                 |                 |                 |
|Empathy                         | 0.42             | 0.61            | 0.26            | 0.40            | 0.50            | 1.00            |                 |                 |                 |
|Emotion control                 | 0.62             | 0.70            | 0.32            | 0.53            | 0.42            | 0.51            | 1.00            |                 |                 |
|Emotional inhibition            | 0.23             | 0.30            | 0.10            | 0.32            | 0.08            | 0.33            | 0.45            | 1.00            |                 |
|Social isolation                | 0.45             | 0.51            | 0.19            | 0.47            | 0.31            | 0.22            | 0.39            | 0.02            | 1.00            |
|Aggression                      | 0.36             | 0.45            | 0.39            | 0.25            | 0.41            | 0.25            | 0.30            | 0.07            | 0.12            |

There were 10 vignettes describing social problem episodes, each to be judged on 10 emotion scales for each actor, in all 20 judgments for each vignette. They were subjected to consensual scoring, i.e. the modal responses in the whole group were first determined, and used to construct the scoring key. A score was then obtained for each respondent and vignette, varying from 0 to 20. The ten vignettes were then treated as items, and an alpha of 0.96 was obtained. The total score, the average of the ten vignettes, was used as an alternate measure of EI, in the MEIS tradition. It should be noted that we have used three additional MEIS type measures in our previous work (art, music and facial expressions being judged in terms of emotional expressions) but that they were not feasible to use in a survey type study. The very high convergence obtained here of the 10 vignettes was not observed in our previous work and may be due to a tendency of some respondents to skip some of the scales. Summation scoring was used so they got lower scores due to this tendency. On the other hand, it seems logical that skipping a scale should mean that they got a lower
score. As a check, we have also scored the vignette ratings by dividing with the number of non-missing responses. The reliability was then lower, but otherwise we could not see any striking differences in the results. In the present paper, the summation scores will be used throughout.

Results

Two approaches to measuring EI. Performance and questionnaire EI were correlated, \( r = 0.19, p=0.019 \). The social desirability scale correlated 0.32 with the EI questionnaire score (\( p<0.0005 \)), non-significantly (-0.16) with performance EI. Partialling out social desirability from the relationship between the two EI measures changed little; it was raised to 0.24 (\( p<0.01 \)). A similar control for relationships to be reported below produced only very marginal changes.

Background data and EI. Women got a higher score than men in EI (questionnaire scale), \( t(151) = 4.639, p<0.0005 \). The size of the difference in SD units was very large indeed, 0.72. Performance EI showed the same tendency but the difference was somewhat smaller. Educational level, scored in three categories, correlated 0.33 (\( p<0.0005 \)) and 0.20 (\( p = 0.019 \)) with questionnaire and performance EI, respectively. Fig. 1 is a plot of questionnaire EI (in z-score format) against educational level, for women and men separately. It is seen that the very large gender difference existed at all educational levels.

![Figure 1](image)

Fig. 1. Mean EI (questionnaire) in z-score format against educational level for men and women separately.

The EI measures, in the same order, also correlated with age: -0.17 (\( p = 0.036 \)) and -0.32 (\( p<0.0005 \)). Hence, the background data hypotheses were supported.
Personality and attitudes Correlations with personality and attitude scales are given in Table 2.

<table>
<thead>
<tr>
<th>Questionnaire EI</th>
<th>Performance EI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self esteem</td>
<td>0.392***</td>
</tr>
<tr>
<td>Psychophobia</td>
<td>-0.694***</td>
</tr>
<tr>
<td>Persistence</td>
<td>0.207*</td>
</tr>
<tr>
<td>Creativity</td>
<td>0.523***</td>
</tr>
<tr>
<td></td>
<td>0.079</td>
</tr>
<tr>
<td></td>
<td>-0.256**</td>
</tr>
<tr>
<td></td>
<td>0.002</td>
</tr>
<tr>
<td></td>
<td>0.158*</td>
</tr>
</tbody>
</table>

* p<0.05, ** p<0.01, *** p<0.001

The table shows the hypothesized relationships to hold, most clearly for questionnaire EI but with the same tendencies for performance EI.

Work related criteria. Relation with the work-related criteria are given in Table 3.

<table>
<thead>
<tr>
<th>Questionnaire EI</th>
<th>Performance EI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family/leisure disturbed by work</td>
<td>-0.586***</td>
</tr>
<tr>
<td>Work disturbed by family/leisure</td>
<td>-0.319***</td>
</tr>
<tr>
<td>Work motivation</td>
<td>0.147</td>
</tr>
<tr>
<td>Job satisfaction 1</td>
<td>-0.092</td>
</tr>
<tr>
<td>Job satisfaction 2</td>
<td>-0.012</td>
</tr>
<tr>
<td>Salary</td>
<td>0.034</td>
</tr>
<tr>
<td></td>
<td>-0.244**</td>
</tr>
<tr>
<td></td>
<td>-0.072</td>
</tr>
<tr>
<td></td>
<td>-0.156</td>
</tr>
<tr>
<td></td>
<td>0.019</td>
</tr>
<tr>
<td></td>
<td>-0.047</td>
</tr>
<tr>
<td></td>
<td>0.123</td>
</tr>
</tbody>
</table>

* p<0.05, ** p<0.01, *** p<0.001

These results partly confirm the hypotheses. Life/work balance was clearly related to EI, see Fig. 2 for the most striking relationship. On the other hand, neither work motivation, job satisfaction nor salary were related to EI at this level.3
Since women reported a lower salary than men did, and at the same time had a higher EI, an analysis taking gender into account would be more informative. A closer scrutiny of the data thus showed that performance EI did have incremental validity with regard to salary. In a regression analysis of salary, this EI measure was entered as an independent variable together with gender and level of education. The amount of explained variance (adjusted) was 0.184, and all three independent variables gave a significant addition to the model (EI weakest), see Table 4.

**Table 4. Regression analysis with salary as dependent variable.**

<table>
<thead>
<tr>
<th>Effect</th>
<th>Standardized Coefficient</th>
<th>t</th>
<th>P(2 Tail)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>0.000</td>
<td>4.784</td>
<td>0.000</td>
</tr>
<tr>
<td>Performance EI</td>
<td>0.180</td>
<td>2.092</td>
<td>0.039</td>
</tr>
<tr>
<td>Educational level</td>
<td>0.303</td>
<td>3.521</td>
<td>0.001</td>
</tr>
<tr>
<td>Gender</td>
<td>-0.323</td>
<td>-3.767</td>
<td>0.000</td>
</tr>
</tbody>
</table>
A major interest of the present study was the validity of the measures for the subgroup of respondents who had had a college education, see Fig. 3. It is seen that the salary increment was about 50% when EI increased from the lowest to the highest 20%.

![Graph showing salary increment with emotional intelligence](image)

Fig. 3. Mean salary plotted against performance EI in 5 groups, each including 20% of the sample, for men and women. College educated respondents only.

Priority to economic values was measured by a question about the importance of economic aspects for vocational choice. It correlated -0.31 (p<0.0005) with questionnaire EI and -0.08 with performance EI (not significant). Hence, there was some support for the hypothesis that those with a high EI were less likely to see economic values as the most important ones. A question about perceived economic success also gave a negative correlation with EI: -0.23 (p=0.005) and -0.18 (p = 0.028) for questionnaire and performance EI, respectively.

**Discussion**

It was found that the two approaches to measuring EI had some convergence. In addition, they tended to show much the same tendencies in relation to other variables. Questionnaire EI was throughout most strongly related to other variables, with the exception of salary level. It should be noted that the two EI measures sample very different types of behavior and are based on very different scoring philosophies. Controlling for social desirability did not produce anything more than marginal changes of the results.

The present results support, in most respects, the EI construct, as measured here,
and its relation to successful life adjustment. High EI was displayed especially by women, highly educated people and young people. We further note that high EI was associated with

- better handling of failure and frustration
- more creativity
- less psychophobia
- higher self esteem

Furthermore, high EI was associated with

- a better balance of life and work
- a higher salary\(^4\) (especially for college educated respondents)

However, EI was not associated with work motivation and job satisfaction, neither with making economics a priority in life. On the contrary, high EI respondents down-played economic values. It is perhaps reasonable that this should be so. The high EI people have skills that help them towards success in various spheres of life, both at work, and in achieving a balance of work and family/leisure. But they have no one-sided priority of work, and hence do not show extreme values of work motivation. It is interesting to note that they still achieved higher salaries, on the average. Maybe economic success is not always, or even often, positively related to a one-sided priority given to economic goals and heavy work.

It is possible that these dynamics function in different ways for men and women but a larger sample is desirable for investigating these details.
References


Sjöberg, L. (manuscript). Emotional intelligence measured in a competitive testing situation.


Notes

1. I am grateful to Jing Guan Pirie, M. Sc., for bringing up and discussing life/work balance issues.

2. About 2,000 US $.

3. There were some indications of a positive relationship between EI and work motivation for men, and a negative for women. This finding should be followed up, and may reflect varying priorities of the genders between work and family/leisure.

4. Some of this effect was due to low EI respondents reporting only part-time work. The sample was too small for a powerful analysis with these subjects deleted, but the tendency was the same. Part-time work can of course be a consequence of vocational failure - suggested by the present results - as well as the effect of many other factors.