

THE BIG THREE DETERMINANTS OF PERFORMANCE: GENERAL MENTAL ABILITY, PERSONALITY, AND EMOTIONAL INTELLIGENCE

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***Abstract.** This paper investigates the impact of Emotional Intelligence, General Mental Ability and conscientiousness, on managerial performance to check if Emotional Intelligence predicts managerial performance over and above conscientiousness and General Mental Ability. The study was conducted on a sample of 100 MBA students with prior managerial experience, and used three measures of managerial performance- one self-report (measuring intrinsic performance) and two objective measures (measuring extrinsic performance). The results showed that subjective and objective measures of performance were not related and EI predicted managerial performance over and above GMA and conscientiousness for the self-report measure of managerial performance but EI was not related to the other two objective measures of performance.*

Managerial effectiveness and success is vital for any organization. Competitive organizations are often those, which are led by decision makers who are highly effective in every managerial activity, be it decision making, handling interpersonal relationships, or adapting to changing business environments. Any tool, which would help in predicting workplace success, is thus highly valued in the field of management development. In this context, the concept of Emotional Intelligence (EI) becomes highly significant. Cognitive intelligence is intuitively considered a valid predictor of occupational success and several decades of psychological assessment research have vindicated the importance of taking social competencies and personality differences into consideration when attempting to predict high performance. Recently however, several claims have appeared in popular literature and in the media about the significant role of EI in the workplace. EI has been claimed to predict a variety of successful behaviors at work, at a level exceeding that of intelligence (Zeidner, Mathews, & Roberts 2004). Critics of EI however, point out a lack of empirical evidence to back these claims and often dismiss it as a construct, which is just a conglomerate of desirable traits. In spite of these criticisms, much of the current interest focusing on EI in organizational settings stems from a desire to explain differential attainment of occupational success, which is not adequately accounted for by cognitive intelligence or personality. In view of this, the present study aims at exploring the impact of EI in predicting managerial success, over and above that predicted by General Mental Ability (GMA) and personality traits.

LITERATURE REVIEW AND HYPOTHESES

Managerial Performance

In the field of management development, there is a strong view that there are three overlapping categories of managerial skills, namely, task related, people related and self-related. Some empirical evidence shows that people related skills are the most significant ones when it comes to enhancing managerial effectiveness (Analoui, Labbaf & Noorbakhsh, 2000). Yet another view suggests that the manager's job is linked with three major dimensions—technical, conceptual, and human (Katz, 1974). Thus, it is evident that a manager needs several skills and traits to be successful. Some of the important factors considered to predict success in a managerial role are cognitive ability and personality factors. Of late, emotional intelligence is also being considered as essential for managers to be successful.

Since a manager's job is a multifaceted one, success as a manager can be measured along different dimensions. Career success is often considered to have both extrinsic and intrinsic components, the former defined in terms of pay, promotions, etc. and the latter through factors like job satisfaction (Judge, Higgins, Thoresen, & Barrick, 1999). Past research shows that career success is best measured as a combination of subjective and objective measures (Turban & Dougherty, 1994). Subjective measures include various self or peer report questionnaires while objective measures include salary, number of promotions, number of job offers, Grade Point Average (GPA), etc. This study uses both subjective and objective measures to capture managerial performance.

Emotional Intelligence (EI)

Over the past several years, the concept of emotional intelligence (EI) has become very popular within the academic community and organizations, especially those in the service sector. The concept of EI first appeared when Salovey and Mayer (1990) defined it as 'the ability to monitor one's own and others' feelings and emotions, to discriminate among them and to use this information to guide one's thinking and actions'. They considered EI as composed of four dimensions: the appraisal and expression of self-emotions, the appraisal and recognition of emotions in others, the regulation of self-emotions, and the use of emotions to facilitate performance. EI thus visualized, is generally called the 'ability' model of EI and is considered by many in the academic circles to meet the standards of a true form of intelligence. However, the popularity and interest among the masses regarding EI has been primarily due to the work of Goleman (1995), in which EI is a much broader concept including a variety of personality and behavioral characteristics. Hence, this model is considered a 'mixed' model. The ability model strongly argues that EI constitutes an additional aspect of intelligence involving emotion, whereas the mixed model has blended EI with numerous other characteristics such as motivation, well-being and personality for which there are already a wide range of reliable and valid measures in existence (Cartwright & Pappas, 2008).

Critics of EI claim that as a construct, it does not predict anything more than what is predicted by other factors like personality. One reason for the wide spread criticism may be because EI has often been touted in the popular press as a panacea for many organizational problems, without sufficient empirical backing. Another reason is that there are several models and definitions for EI and the construct is measured using a variety of instruments in different research studies, yielding mixed results. When defined and measured properly, EI is indeed a valuable concept and has been considered by several researchers as a construct that reflects personal characteristics and how they affect situations to impact behavior (Shipper, Kincaid, Rotondo, & Hoffman, 2003). Further, strong evidence has been found for the discriminant and incremental validity of EI against personality traits (Petrides, Pita, & Kokkinakki, 2007). EI was found to be related to and yet distinct from personality dimensions and to have incremental predictive power on life satisfaction (Law, Wong, & Song, 2004). In addition, Caruso, Mayer, and Salovey (2002) found that EI can be measured reliably and is relatively independent of traditionally defined personality traits, supporting the discriminant validity of the EI construct. In short, a careful review of literature reveals that many of the criticisms regarding EI are due to the ambiguity in its definition and measurement and that there is in fact very good empirical support to the fact that it is in fact a distinct and useful concept.

Over the last two decades, there have been several studies on the usefulness of EI in predicting work and life outcomes in a variety of settings. It has been suggested that a person's ability to adapt and cope in life depended not only on the rational abilities measured by IQ tests, but also on an integration of emotional and rational abilities (Rapisarda, 2002). Hundreds of studies have been conducted to find the relation between EI and job performance parameters like managerial success. EI has been found to be positively correlated to task performance and organizational citizenship behaviors (Carmeli & Josman, 2006). Ashford and Tsui (1991)

found that managers who demonstrated high self-regulation by seeking negative feedback were perceived to be more effective than those who sought positive feedback. EI was found to be positively correlated to managerial innovation and effectiveness (Yuvraj & Srivastava, 2007) and several aspects of organizational learning (Singh, 2007). Emotionally intelligent leaders were found to be able to evaluate team members' emotional situations, manage conflicts, and encourage supportive interactions thus creating an environment that induces collective motivation in the team (Prati, Douglas, Ferris, Ammeter, & Buckely, 2003). In addition, EI was found to be positively related to general well-being (Lenaghan, Buda & Eisner, 2007). Thus, past research clearly shows that there is a strong relation between EI and a variety of performance related work outcomes. Based on the above reasoning, we propose that EI will be positively related to managerial performance as a manager's job includes an ability to perform well at day-to-day tasks as well as to skillfully interact with subordinates, peers, and superiors necessitating the understanding and regulation of ones own and others' emotions.

Hypothesis 1. Emotional Intelligence is positively related to managerial performance.

General Mental Ability (GMA)

General mental ability (GMA) is a conceptualization of intelligence that is widely used. It has been defined as a very general mental capability, that among other things, involves the ability to reason, plan, solve problems, think abstractly, comprehend complex ideas, learn quickly, and learn from experience. Put more simply, it is defined as the ability to learn. Contrary to popular conception, GMA refers not to genetic potential, but to developed general cognitive ability. The fact that GMA scores are influenced by genes does not change the fact that they reflect more than just genetic potential (Schmidt, 2002).

GMA measures have been found to be valid predictors of job performance across several occupations (Salgado, Anderson, Moscoso, Bertua, Fruyt, & Rolland, 2003). Schmidt and Hunter (2004) claim that GMA predicts occupational level attained and performance within one's chosen occupation better than any other ability, trait, or disposition and better than job experience. Further, Fulmer and Barry (2004) suggest that GMA influences performance in various situations (job performance, training success, educational attainment, etc.), and it becomes even more predictive of performance as situations become more complex (e.g., in managerial jobs and under conditions of unexpected change). Thus, a review of the existing literature very clearly shows that GMA is an important factor in predicting job performance and career success. Based on this, it seems reasonable to infer that even in the case of a manager, a high degree of mental ability may very well lead to superior job performance.

Hypothesis 2: General Mental Ability will be positively related to managerial performance.

Personality

During the 1980s, the views of many personality psychologists began to converge regarding the structure and concepts of personality. Generally, researchers agree that there are five robust factors of personality, which can serve as a meaningful taxonomy for classifying personality attributes. The work of Norman (1963) is of particular significance because his labels (extraversion, emotional stability, agreeableness, conscientiousness, and culture) are used commonly in the literature and have been referred to, subsequently, as "Norman's Big Five" or simply as the "Big Five." The first dimension in the Big Five is extraversion, and traits commonly associated with it include being sociable, gregarious, assertive, talkative, and active. There is also general agreement about the second dimension. This factor has been most frequently called emotional stability, stability, emotionality, or neuroticism. Common traits associated with this factor include being anxious, depressed, angry, embarrassed, emotional, worried, and insecure. The third dimension has generally been interpreted as agreeableness or

likeability. Traits associated with this dimension include being courteous, flexible, trusting, good-natured, cooperative, forgiving, softhearted, and tolerant. The fourth dimension has most frequently been called conscientiousness. Associated traits include dependability, being careful, thorough, responsible, and organized. It is also considered to incorporate volitional variables, such as hardworking, achievement-oriented, and persevering. The last dimension has been interpreted most frequently as openness to experience. Traits commonly associated with this dimension include being imaginative, cultured, curious, original, broad-minded, intelligent, and artistically sensitive. While there is general agreement among researchers concerning the number of factors, there is some disagreement about their precise meaning, particularly conscientiousness and culture factors. In spite of this, the five-factor model serves as an orderly classification scheme widely used for the accumulation of empirical results (Barrick & Mount, 1991).

There are numerous studies, which have explored the link between personality traits and job performance. Personality difference variables like achievement orientation and general self-esteem were found to have significant direct and moderating effects on the effectiveness and performance of store managers (Lusch & Serpkenci, 1990). Two of the Big Five Traits, conscientiousness and extraversion were found to be positively associated with job-performance (Thorenson, Bradley, Bliese & Thorenson, 2004). In a meta-analysis on the relation between personality and job performance, Barrick and Mount (1991) found that conscientiousness predicted various criteria of job performance across occupation types. In view of these findings from past research, we predict that conscientiousness will be related to managerial performance.

Hypothesis 3: Conscientiousness will be positively related to managerial performance.

The Impact of EI over and above GMA and Conscientiousness on Managerial Performance

As is evident from the preceding discussion, EI, GMA and conscientiousness have all been shown as having positive association with managerial success. Although a large number of studies use a linear effect model, which proposes that these constructs influence occupational success by making independent contributions, there are very few studies, which have considered the impact of all three simultaneously on managerial success. This has been pointed out by Antonakis (2003), who says that evidence for EI as a viable construct, independent of IQ and personality factors is sparse, and that there are few studies, which show that EI predicts leadership effectiveness beyond what is predicted by GMA or the Big Five or a combination of the two. Further, Brody (2004) says that there is not a single study reported that indicates that EI has nontrivial incremental validity for a socially important outcome variable after controlling for intelligence and personality.

However, Wong and Law (2002) have argued that when properly defined and measured, EI is a true form of intelligence and is distinct from GMA and personality. Using a new EI scale, they showed that on top of general mental abilities, EI was a good predictor of job performance. In addition, Law, Wong, and Song (2004) have demonstrated empirically that EI is distinct from personality dimensions and have established the predictive validity of EI in social and organizational settings. The vocation of a manager involves interaction with other individuals in a variety of contexts. Once social interactions are involved, emotional awareness and emotional regulation become important factors affecting the quality of the interactions (Wong & Law, 2002). These factors are integral to the concept of EI and can explain why EI is able to predict success over GMA and personality.

In view of the above discussion, it is reasonable to predict that while all the three variables are related to managerial success, EI captures some unique dimensions of managerial success,

which cannot be captured by GMA or conscientiousness. Thus, we aim at finding this incremental validity of EI in predicting managerial performance over what is predicted by general mental ability and conscientiousness.

Hypothesis 4: Emotional intelligence is positively related to managerial performance after controlling for GMA and conscientiousness.

METHOD

Participants and Procedure

A survey was conducted among students pursuing a one-year MBA program, who had prior experience in supervisory or managerial roles in organizations across India. The survey was sent to the participants over email and had separate scales to capture the different variables. The respondents were informed about the purpose of the study and were assured of confidentiality of the data provided. The participants were requested to refer to their earlier experience to answer questions pertaining to managerial performance, salary etc. One hundred and four responses were received and after filtering for missing data, 100 responses were used for the data analysis.

Out of the 100 respondents, 76 were male and 24 were female. The work experience of the respondents ranged from nine months to 93 months with a median value of 44 months. The annual incomes varied between Rs.216,000 to Rs.1,200,000 with a median of Rs.450,000. The participants represented four industry sectors, Information Technology (IT; 74%), manufacturing (17%), shipping (5%), and others (media, education and entrepreneurial ventures; 4%).

Measures

Managerial performance was measured in three ways. First, a 45-item scale developed by Gupta (1996) was used to measure self-reported managerial performance (called managerial effectiveness). This measure uses a 5-point Likert scale. The scale had a Cronbach's alpha score of 0.93 for this study, indicating high degree of internal consistency in the measure. Second, in line with past research (Dreher & Ash, 1990; Joshi, 2008; Scandura, 1992; Turban & Dougherty, 1994; Whitely, Dougherty, & Dreher, 1991), a more objective measure of managerial performance, the ratio of salary to number of years of work experience (called managerial success) was also collected. Third, the cumulative grade point average (CGPA) achieved by the students during their course of instruction in the MBA program was used as the third measure of managerial performance. The evidence on the linkage between CGPA and career success is mixed—some studies have shown that high CGPA is related to positive career outcomes (Harrell & Harrell, 1974; Roth, BeVier, Switzer III, & Schippmann, 1996) while others (Bretz, Jr., 1989) have found no significant relationships. The CGPA earned by students in a business school depends on their performance not only in conventional examinations but also in projects, term papers, presentations, and simulation exercises and hence it is likely to be highly predictive of students' performance as managers later in their career. Moreover, recruiters on campuses regularly use CGPA as a screening device and as a means of predicting future performance (Rynes, Orliczky, & Bretz, Jr., 1997). Values for CGPA for this sample, ranged from 2.64 to 3.79 with a median value of 3.28. Together the three measures of managerial performance cover the domains of "extrinsic" (or observable and objectively measurable) success and "intrinsic" (subjective reactions of the individual) success which have been used in earlier research (Judge, Cable, Boudreau, & Bretz, 1995; Turban & Dougherty, 1994).

Emotional intelligence was measured using the Wong and Law Emotional Intelligence Scale (WLEIS; Wong & Law, 2002). WLEIS is a 16-item scale, based on the ability model of EI and uses a 7-point Likert scale. Overall Cronbach alpha for this scale in this study was 0.69.

Conscientiousness was measured using 20 items from the International Personality Item Pool (IPIP, 2001). This measure uses a 5-point Likert scale. Cronbach alpha for the scale was 0.86.

GMA was also measured using the IQ scale developed by Eysenck (1962). This is a 40-item questionnaire intended to be completed in 30 minutes. The IQ scores ranged from 109 to 132 with the median value being 122.

Table 1

Means, Standard Deviations, and Intercorrelations amongst GMA, Conscientiousness, EI, and Managerial Performance.

	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9	10
1. GMA	122.63	05.56										
2. Conscientiousness	003.59	00.52	0.20*	(.86)								
3. EI	005.40	00.72	0.23*	.27**	(.69)							
4. Managerial effectiveness	003.80	00.47	0.35**	.32**	.52**	(.93)						
5. Managerial success	143,423	43,591	0.09	-.17 [†]	.06	-.06						
6. CGPA	003.25	00.23	0.30**	.20*	-.01	.06	-.12					
7. Age (in years)	024.94	01.40	0.10	.14	.12	.17 [†]	-.30**	.22*				
8. Gender (Male = 1, Female = 2)	001.24	00.42	-.18 [†]	.06	.00	-.05	.00	-.03	-.23*			
9. Work Experience (in months)	044.42	16.04	0.08	.09	.04	.14	-.36**	.23*	.95**	-.24*		
10. Salary (in Rs.)	509,780	199,925	0.22*	.02	.14	.15	.36**	.14	.67**	-.26**	.66**	
11. Industry (IT = 1, Manufacturing = 2, Others = 3)	001.35	00.64	-.15	-.07	.00	-.14	-.03	-.06	-.04	-.05	-.02	-.08

Coefficient alphas are in parenthesis along the diagonals; N = 100.

[†] p < 0.1; * p < 0.05; ** p < 0.01.

RESULTS

Descriptive statistics, coefficient alphas, and correlations among all the measures are presented in Table 1. Moderate correlations were displayed between GMA and conscientiousness, EI and managerial effectiveness as well as conscientiousness and managerial effectiveness.

Three sets of stepwise regressions were done in three steps each with each of the three measures of performance viz. managerial effectiveness (self-reported), managerial success, and CGPA as the dependent variable. In the first step only GMA and the control variables were regressed on the dependent variable, in the second step conscientiousness was added, and in the third step, EI was added. The outputs of the regressions are shown in Table 2.

Table 2: Summary of regressions to study the impact of GMA, Conscientiousness, and EI on Managerial Performance

	Managerial Effectiveness			Managerial Success			CGPA		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
GMA	.33**	.28**	.21**	.11	.15	.13	.31**	.29**	.31**
Conscientiousness		.22*	.12		-.16 [†]	-.19 [†]		.11	.14
EI			.44**			.12			-.13
Age	.42	.29	-.03	-.32**	-.30**	-.31**	-.03	-.10	-.00
Gender (Male = 1, Female = 2)	-.00	-.02	-.03	-.03	-.01	-.01	.04	.03	.03
Work experience	-.28	-.20	.14	-	-	-	.31	.35	.25
Salary	-.03	.00	-.04	-	-	-	-.10	-.08	-.06
Industry (IT = 1, Manufacturing = 2, Others = 3)	-.14	-.12	-.15 [†]	-.03	-.05	-.05	-.04	-.03	-.02
Adjusted R^2	.13	.16	.33	.07	.09	.09	.09	.10	.10
Overall F	3.43**	3.79**	7.07**	2.95*	2.96*	2.75*	2.74*	2.54*	2.44*
ΔR^2		.03	.17		.02	.00		.01	.00

*Standardized regression coefficients are shown. $N = 100$. [†] $p < 0.1$; * $p < 0.05$; ** $p < 0.01$.*

The results of the first set of three regressions show that GMA, conscientiousness, and EI are all significantly related to self-reported managerial effectiveness. In fact, in the third stage when EI enters the equation, conscientiousness ceases to be a significant predictor of managerial effectiveness. This implies that EI predicts self-reported managerial effectiveness better than conscientiousness. In fact, if we compare the standardized regression coefficients we find that EI is twice as important as GMA in predicting self-reported managerial effectiveness.

The results of the second set of three regressions show that none of the three hypothesized variables viz. GMA, conscientiousness, and EI, was significantly related to managerial success. The results of the third set of three regressions show that GMA is a significant predictor of CGPA; however, conscientiousness and EI have no impact on CGPA.

DISCUSSION

This study investigated the impact of EI, GMA and conscientiousness on managerial success. The study also looked into the incremental impact of EI over and above the other two factors in predicting managerial success. The results showed that the independent variables, EI, GMA and conscientiousness showed moderate correlation (varying from .20 to .31) as shown in Table 1. This is expected, as conceptually there is some amount of overlap between them. For example, by definition, EI is an ability and thus qualifies as a facet of intelligence. Moreover, in order to be considered as a true form of intelligence, EI needs to display moderate correlation with other forms of intelligence like cognitive intelligence or IQ (Wong, Law & Song, 2004).

There was no relationship between the intrinsic and extrinsic measures of managerial performance. This finding is consistent with that of Judge and Bretz (1994) who suggest that these two measures are independent. One reason for this for this could be the limited validity of these measures. Since there are several dimensions to managerial performance, we used three different measures, one subjective measure (self-reported managerial effectiveness) and two objective measures viz. managerial success (defined in terms of salary earned per years of work experience) and CGPA. Another reason for the lack of a significant relationship could be that subjective managerial performance and objective managerial performance could be two very different things. In other words the extent to which individuals are satisfied with their performance may have little to do with tangible achievements.

We found that EI is a strong predictor of (subjective) managerial effectiveness even after controlling for the effect of GMA and conscientiousness. In fact, EI is twice as important as GMA in predicting managerial effectiveness. Emotionally intelligent individuals are likely to be very effective in work related environments where output is a function of team effort and not just individual ability or effort. Moreover, they are likely to perceive their work to be better and are hence likely to be more satisfied with their work.

On the other hand, we found that EI was not related to (objective) managerial success and neither did it have any impact on CGPA. The CGPA achieved by a student was purely a function of GMA. One reason for this could be that most of the respondents were between 22 and 29 years of age (the median age was 25) and having work experience between nine months and 93 months (the median work experience was 44 months). At an entry level, factors such as educational background, individual abilities, and individual efforts are likely to be more valued by companies rather than EI. Similarly, academic success is likely to be solely based on performance in examinations, which also is largely a function of GMA rather than EI. A second reason for this could be that EI has limited impact on objectively measured performance and this meager impact could not be detected in this small sample (perhaps due to range restriction). Perhaps a larger sample size may reveal significant effects of EI on objectively measured managerial performance. A third reason for the limited impact of EI on objective managerial performance could be the presence of moderators of the EI-performance relationship. The EI-performance relationship may be significant only when the job role involves a large amount of interpersonal interaction.

Limitations

A limitation of this study is that the only significant relationship between EI and a measure of managerial performance is based on a self-report measure and hence the findings could be because of common-method variance (Podsakoff & Organ, 1986). While self-reported objective and demographic data is easily verifiable, other information like personality traits, behavior, feelings, attitudes, and perceptions are not. One of the remedies suggested for the common method bias is the use of independent sources for predictor and criterion variables (Podsakoff & Organ 1986; Podsakoff, MacKinzie, Lee, & Podsakoff, 2003). Hence, future studies should try to measure EI and managerial effectiveness from different sources.

Another reason for the lack of significant findings could be due to range restriction caused because of a small sample size consisting of respondents having very similar characteristics. Studies on larger and more heterogeneous samples may reveal significant relationships between measures of ability and objective measures of managerial performance.

Conclusion

Personality factors and cognitive ability have traditionally been considered the main predictors of high performance and career success. Over the past several years, emotional intelligence is being written about as a valid predictor of a variety of organizational success factors. However, there has also been criticism that EI is in fact not a useful construct and that it does not predict much other than what is predicted by personality and GMA. We tried to investigate the impact of these three factors, GMA, personality, and EI on managerial performance. This study used three measures for managerial performance, one subjective measure that was self-reported by the respondents and the other two measures based on objective information from independent sources. The results showed that when the subjective measure was used, all three of the independent variables viz. GMA, conscientiousness, and EI were positively related to managerial performance and more significantly, EI had the strongest impact on self-reported managerial effectiveness. When the objective measure was used, EI was not found to be related to managerial performance. Thus, EI may make an individual more satisfied with his or her performance; however, the impact of high EI may not be visible in more visible measures of performance.

Despite limitations, this study has some significant implications for practice. First, managers should strive to include more holistic measures of performance, which include aspects of teamwork such that the EI abilities of employees are gainfully harnessed and appreciated. Second, academic institutions must broaden their assessment models such that they include aspects of conscientiousness as well as EI and not just GMA. Finally, researchers must explore the role of EI in setting expectations and coping with unpleasant realities in one's environment. In this manner EI could be a significant predictor of happiness, satisfaction, or subjective well being. It is likely that individuals with high EI set more realistic expectations, easily adapt themselves to adverse circumstances, and as a result evaluate themselves and their circumstances more favorably.

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