

# Evaluating the correlation between Emotional Intelligence (EI) and Effective Leadership (EL) among managers in Miri Shipbuilding Industry

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**Abstract.** This article investigates the correlation between Emotional Intelligence (EI) and Effective Leadership (EL) among project managers. Miri shipbuilding industry is chosen for the study due to the reason that the project managers of the shipbuilding companies are facing many challenges from the market right from supply chain to distribution. To retain subordinates and make them work for the success of the projects is the biggest challenge for the project managers of Miri shipbuilding industry. This study is conducted to help the industry find the correct measures to resolve the issues mentioned. Two sets of questionnaires were distributed to the project managers and their subordinates to determine the EI factors that contribute to effectiveness of the leadership quality of the project managers. Data was collected from 8 companies. 50 managers and 8 project managers participated in this study. Many studies have been done in this area in different industries and significant correlation is found evident in many studies. Based on Goleman's EI indicators to determine effectiveness of leadership, this study also shows significant results. Motivation, an indicator of EI shows significant correlation with the effectiveness of the leader. EI and EL also show significant correlation.

**Keywords:** Emotional Intelligence, Effective Leadership, Motivation & Miri

## 1. Background

This research examines the impact of EI on EL among managers from Miri shipbuilding industry. The shipbuilding industry is an important industry that provides the backbone for the expansion of shipping business in Malaysia. It is one of the core divisions in the marine transportation sector in the country and provides employment in various fields/activities such as naval architecture; engineering, welding and fabrication. The state of Sarawak in Borneo has the most number of shipyards in Malaysia, mostly consisting of small yards.

In recent years, there has been an increase in the activities at local yards to accommodate the booming exploration and construction activities in Malaysian deepwaters. With demand for hydrocarbon energy at high levels and with the discovery of abundant offshore sites in the waters of the states of Sabah and Sarawak, there has been an increase of demand for vessels of various categories. Malaysian yards encounter many challenges to truly recognize their potential on workboat building. There are many reasons for this such as lack of capital, low productivity due to labor-exhaustive and low-tech approach, lack of economies of scale due to small domestic market, and high cost of imported materials.

With the increasing pressure from the market, it is important that project managers of an organization must have the capability to handle such situation. Project managers should be able to manage their emotions, and establish good relationships with colleagues in their work environment to be able to deal with the changes during the unstable climate in shipbuilding industries. Having control of their emotions helps to pursue and achieve goals. Leaders must develop the skill so that they can lead effectively, work collaboratively, foster emotional and intellectual growth and be able to cope with daily pressures and

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demands. Leaders, who are able to establish mutual interest, respect and trust with members will be more effective. EI is important for a leader because their leadership style has a big influence on the climate of the organization and performance of subordinates. This has been investigated in many studies and found correct in many cases. Thus, our study is significantly important in providing solutions in this regard.

## **2. Defining EI and Effective Leadership and their relationship from literature**

### **1.1 Emotional Intelligence (EI)**

In a fast transforming globalised world where the challenges are high from competitors, constant change in technologies and the need to meet up with advance technologies, organizations are forced to look into the importance of emotional intelligence (EI) and leadership skills. For many years, intelligence was linked with academic scholars and measured with a number called the intelligence quotient (IQ) [1]. However, this traditional view of EI is too narrow [2] and researchers now trust that there are more components to measure intelligence than just IQ score [1]. This is further supported by Samad [3] who found that the leaders need to have more than just the required skills and IQ but also the right personalities and emotions to face challenges. Polychroniou [4] asserted that in order to recognize the emotional development and deal with them effectively, an individual needs to have both self-awareness and self-regulation.

EI has been defined as “the capacity to reason about emotions, and of emotions to enhance thinking” [5]. According to Bostjancic [6], EI of managers has an effect on employee satisfaction and behavior, hence managers with highly expressed EI are likely to provide support as they are sensitive to their own feelings as well as others.

Emotional intelligence (EI) has been generally accepted as the foundation for good leadership whereby a person’s level of EI is a good sign of how s/he will perform in the working atmosphere [7]. It was suggested that EI can optimistically contribute to leadership success and research findings in the field of leadership [8]. Hsu et al. [9] that EI is an important aspect for EL as it assists leaders to monitor subordinates, and shape their perception of work and reflect their needs. EI has also been reported specifically in relation to the leadership and management of change [10]. Hence EI is a very important skill required by business leaders to ensure organization’s success.

According to Goleman [11], the most effective leaders are alike in one crucial way: they all have a high degree of EI. Furthermore EI individuals distinguish emotions in themselves and others and are able to react properly [12]. To determine whether EI serves as a unique type of human ability, it is necessary to have sufficient methodology for this construct judgment [13].

Kooker and colleagues [14] acknowledged three most well-known models (see [15], [5] and [16]). The comparison of these different EI models was done by Butler [17]. Bar-On’s model describes "EI as a cross-section of interrelated emotional and social competencies, skills and facilitators that impact intelligent behavior"[16]. Five meta-factors addressed in Bar-on Model of EI are Intrapersonal, Interpersonal, Stress Management, Adaptability and General Mood. Research on the competence of EI from Goleman’s model [15] had been done by various researchers. Among the findings are: executives having higher level of empathy are more likely to yield high profit-earning companies [18]; social skills, motivation and empathy are linked with transformational leadership [4]; there is a relationship between empathy and the project manager competence of attentiveness [19]; social skills is the most influential factor for EL [3]; empathy is a full mediator of social skills and effectiveness of leader role and that there is a positive relationship between empathy and social skills [20].

### **1.2 Effective Leadership**

Rastogi and Dave [21] define EL as the capability of a leader to manage a situation appropriately, resulting in good outcome or be able to meet the target of the activities and objectives set by organizations. A successful leader inspires and motivates others, promotes a positive work environment, perceives and understands emotions, fosters an organizational climate where challenging opportunities are turned into

successes and so forth [22]. In other words, it is the leader's skills that are capable of motivating and encouraging subordinates to contribute to the effectiveness and success of the organization as a whole [23].

Kouzes and Posner [24] developed a five-dimension theory of leadership termed as "Five Practices of Leadership". It asserts that successful leadership is attributed to: model the way, inspire a shared vision, challenge the process, enable others to act and encourage the heart (as cited in [22]). Kouzes and Posner [25] further theorized that excellent leaders follow these five best practices and listed 20 specific attributes for identifying successful leaders in the Leadership Practices Inventory (LPI).

Given the diverse roles of effective project managers that include facilitator, motivator and coordinator, they must balance their decisions to meet the needs of all parties involved and bring together different groups of individuals to create a team environment. Hence, managerial environment requires leadership qualities to achieve successful project outcomes [26].

Many studies on the relationship of EI and EL reveal their positive relationship: Anand and UdayaSuriyan [23] found out that EI helps boost self-confidence and knowledge; George [27] suggested EI brings in EL and higher capability in managers to recognize and manage moods, emotions in himself and others; Leban and Zulauf [28] supported this and added that EI helps understand the emotions and moods of project managers to decide which approaches may work well; and Gardner and Stough [29] found out that leaders become more flexible to handle a variety of demands and use the right approach at the right time.

### **3. Hypotheses Development**

Research on various industries in different countries had been conducted but there is none done on shipbuilding industry. This research paper attempts to test the findings from various literature using Goleman's [15] emotional competence framework in the Miri shipbuilding industries. The dependent variable is "Effective Leadership" and the independent variable is "Emotional Intelligence". There are 5 sub-variables of the independent variable: self-awareness, self regulation, motivation, empathy and social skills. Based on the above, the following hypotheses are developed:

H1: There is a positive relationship between self-awareness and EL.

H2: There is a positive relationship between self-regulation and EL.

H3: There is a positive relationship between motivation and EL.

H4: There is a positive relationship between empathy and EL.

H5: There is a positive relationship between social skill and EL.

H6: EI dimensions (self-awareness, self regulation, motivation, empathy and social skills) contribute significantly to EL.

### **4. Research Design and Empirical Instruments**

Close-ended structured questionnaires were used in this study and data were collected from 50 managers reporting to 8 project managers. The questionnaires contained demographic information followed by the EI self-generated questionnaire based on Goleman's Emotional Competence Framework [15] and Leadership Practice Inventory Observer (LPI-O) developed by Kouzes and Posner [24]. The questionnaires were sent via email to participants. The whole data collection process took around 3 weeks to complete. The questionnaires except the demographic questionnaire were developed on a 5-point Likert scale.

The population for this study is from 8 shipbuilding companies in Miri. The participants in this study are project managers and line managers from various functional areas such as Accounts, Procurement, Engineering, Human Resources, Store and Operations. The sample size is 58. Random sampling is used to avoid biasness and allow an equal chance for each to be selected.

### **5. Data Analysis**

The reliability of the self-generated questionnaire to determine the EI of the project managers was tested through Cronbach's alpha. The Cronbach's alpha value stands at 0.408, which indicates weak reliability of the

scale for all the 33 items. After deletion of 14 items, the significance rises to .606- to show reliability of the scale for all 5 EI indicators. A common factor analysis with principal component factoring was conducted for testing the validity of the scale with varimax (orthogonal) rotation. The Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy of (.530) indicates the loading is moderate but appropriate for the factor analysis since it is higher than (.4), but the Bartlett's Test of Sphericity (223.883 at  $p=0.000$ ) is significant. Thus it can be concluded that the strength of the relationship among variables is strong as shown in the Bartlett's Test of Sphericity (see Table I). 17 factors emerge to be explored for validity through regression.

The Pearson's correlation coefficient was tested for the above normally distributed sub-variables of Independent variables with the Dependent variable (Effective Leadership). There is a significant linear correlation for both of the independent variables Self-regulation and Motivation with EL.

Table 1. KMO & Bartlett

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.530
Bartlett's Test of Sphericity	Approx. Chi-Square	223.883
	df	136
	Sig.	.000

Table 2. Coefficients<sup>A</sup>

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	185.706	17.516		10.602	.000
	SA1	1.609	.887	.221	1.814	.076
	SR1	1.294	.700	.230	1.848	.071
	MO1	2.554	1.224	.276	2.086	.042
	EMP1	-.876	.498	-.220	-1.759	.085
	SSK1	.444	.382	.157	1.161	.252

a. Dependent Variable: LEAD

Table 3. ANOVA<sup>B</sup>

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	325.287	5	65.057	4.408	.002 <sup>a</sup>
	Residual	693.694	47	14.759		
	Total	1018.981	52			

a. Predictors: (Constant), SSK1, SR1, SA1, EMP1, MO1

b. Dependent Variable: LEAD

Table 4. Model Summary<sup>B</sup>

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.565 <sup>a</sup>	.319	.247	3.842

a. Predictors: (Constant), SSK1, SR1, SA1, EMP1, MO1

b. Dependent Variable: LEAD

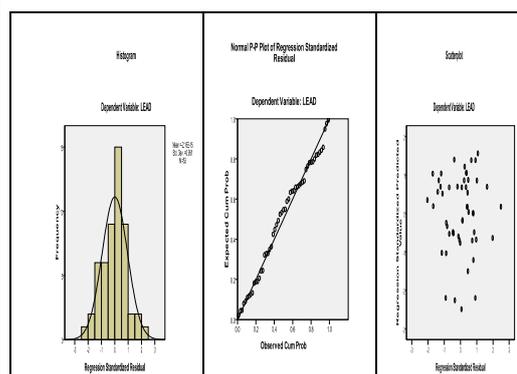


Fig. 1: Regression Assumptions

Regression Assumption of Normality, linearity, homoscedasticity and independence of residuals are met moderately as indicated in the **Figure 1**.

Regression Model for Effective leadership (H6)

$$EL_t = \alpha + \beta_1 SA_t + \beta_2 SR_t + \beta_3 MO_t + \beta_4 EMP_t + \beta_5 SSK_t + e_t$$

Where EL = Effective leadership

SA=Self-Awareness, SR=Self-regulation, MO=Motivation, EMP=Empathy and SSK= Social Skills,  $e_t$  = error term and  $t$  = no. of respondents(as indicated in Table VI)

## 6. Hypotheses Testing

From the model's summary (Table III), Linear Regression validates the regression model (Table IV). The overall model is significant at the .002 level and effect size is  $R^2 = .319$ . The model explains 31.9% of the variance in EI.

F statistics is as below (see Table IV).

$325.287/14.759$  at  $5,47 = 4.408 > 1$ . So, the global Null Hypothesis is rejected.

The F value is more than 1 and thus significant. This indicates that there are differences in group means indicating that EI has an effect on the EL.

From the coefficients matrix (Table II), the regression model is significant at  $p=.000 > .05$ . Overall, there is a significant relationship of EI indicators with effective leadership. Table II also shows insignificant result for 4 of the EI indicators (SA, SR, EMP and SSK) and only one variable, i.e. Motivation ( $t=2.086$ ,  $p\text{-value}=0.042$ ) has significant correlation with the effective leadership. Table-V shows the results of hypotheses testing.

## 7. Discussion on Findings

The finding shows that out of 33 items in the questionnaires (QB and QB1), only 17 items/factors are extracted with a higher KMO measure of sampling adequacy. This validates our factor analysis and thus the regression results are valid. All the regression assumptions are met to proceed further with the linear regression. Out of six hypotheses, four are rejected (as shown in Table V) and only two hypotheses (H3 & H6) are accepted. The regression model is a significant model indicating a clear correlation among EI and EL. This indicates that overall EI has significant correlation with EL and only one dimension of EI, i.e. Motivation (personal competence) has significant positive relationship with effectiveness of leadership. This study indicates the suitability of using Goleman's emotional competence framework [15] and Kouzes and Pousner's LPI-O [24] in the Miri shipbuilding industry. Our findings are in line with the findings of Polychroniou [4] based on a similar study showing social skills, motivation and empathy are linked with transformational leadership.

## 8. Limitations of the Study

There are several limitations in the study. The sample size is not adequate to get more significant results. As the size of the sample increases, the samples become more representative of the population [30]. The self-generated questionnaire based on Goleman's competencies [15] fails to show a significant Cronbach's alpha and shows weak reliability of the questionnaire when all factors remain. The Cronbach's alpha is higher though not very significant at 0.606 with 14 factors remaining. This problem could have been solved by a pilot test which was not conducted in this case due to the limited time factor.

## 9. Conclusion

The study successfully determines the correlation of EI and EL. Out of five EI indicators, only one indicator (Motivation) has shown significant positive correlation to effective leadership. This study provides empirical evidence on the correlation between EI and EL, and between Motivation and EL. Project managers in the shipbuilding industry look for opportunities/motivations to meet with the standard of excellence. We suggest the companies to look into this aspect to satisfy the project managers to work more effectively towards project completion and success.

Table 5. Result of Hypotheses Testing

RESEARCH HYPOTHESIS	EXPERIMENTAL RESULTS
H1: There is a positive relationship between self-awareness and EL	Rejected
H2: There is a positive relationship between self-regulation and EL.	Rejected
H3: There is a positive relationship between motivation and EL	Accepted

H4: There is a positive relationship between empathy and EL	Rejected
H5: There is a positive relationship between social skill and EL	Rejected
H6: EI dimensions (self-awareness, self regulation, motivation, empathy and social skills) contribute significant on EL	Accepted (refer Table II & IV)

## 10. Implications

This study confirms the reliability and validity of the empirical instrument used to measure EI based on Goleman's Emotional Competence Framework [15] which also may promote effective leadership. Future research can be done to explore the relationship to investigate effectiveness of leadership among project managers in project success.

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