

Emotional Intelligence of Project Management Engineers in Puerto Rico: Profile Insights

Hiram Rojas García
Manufacturing Engineering
Miriam Pabón González, Ph.D.
Industrial Engineering Department
Polytechnic University of Puerto Rico

Abstract — Although most Project Management Professionals agree that emotional intelligence is of paramount importance in addressing a project's human factor, few studies exist that shed light on the emotional intelligence of Project Management Engineers in Puerto Rico. A study was performed using a sample consisting of construction project managers of a company located in San Juan and graduate students of the Polytechnic University of Puerto Rico-San Juan campus. A preliminary profile of these professionals was developed in terms of emotional intelligence skills. The results showed that although skilled emotional coaches who are well self aware of their emotions and have strong relationship management skills, remedial work is necessary in order to improve how Puerto Rican PMEs manage their emotions and motivate themselves.

Key Terms — Awareness, Coaching, Motivation, Relationship.

INTRODUCTION

This research study was performed using a sample consisting of construction project managers of a company located in San Juan and graduate students of the Polytechnic University of Puerto Rico-San Juan campus. The study focuses on developing a preliminary profile of Project Management Engineers in Puerto Rico in terms of emotional intelligence skills and its objective is to gain insight on the perspective of Puerto Rican PMEs of what comprises the making of a good project manager regarding human interactions. It also intends to identify correlations within each of the 5 dimensions of the emotional intelligence of these professionals.

Basic Management Functions

Regardless of level or area, management involves the four basic functions of planning and decision making, organizing, leading, and controlling, see Figure 1 [1].

Planning means setting organizational goals and deciding how best to achieve them. Part of this planning process involves selecting a course of action from a set of alternatives or *decision making*.

Once goals have been set, and a workable plan has been developed, the next management function involves *organizing* people and the other resources necessary to carry out the plan. This process includes, but is not limited to determining how activities and resources are to be grouped.

Leading is the set of processes used to get members of the organization to work together to further the interests of the organization.

The final phase of the management process is *controlling*, or monitoring the organization's progress toward its goals, that is, to ensure that it is performing in such a way as to arrive at its "destination" at the appointed time [1].



Figure 1
The Management Process

Fundamental Management Skills

To carry out the management functions most effectively, managers rely on a number of different fundamental management skills of which the most important are technical, interpersonal, conceptual, diagnostic, communication, decision-making, and time management skills [1].

Figure 2 [1] shows the fundamental skills needed by effective managers.

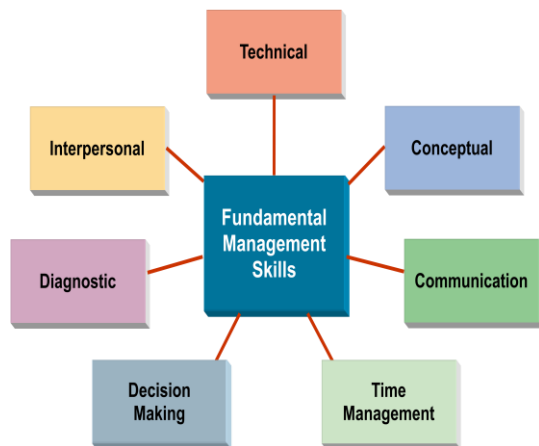


Figure 2
Fundamental Management Skills

For obvious reasons, managers need *interpersonal skills* – the ability to communicate with, understand, and motivate both individuals and groups. Managers must get along with subordinates, peers, and those at higher levels at the organization.

Communication skills refer to the manager’s abilities both to effectively convey ideas and information to others and to effectively receive ideas and information from others.

It is in these two major management skills that emotional intelligence plays an important role. Emotional intelligence can support managers in more accurately perceiving reality through understanding and relating to others’ emotions and provides social skills that enable them to communicate vision in a way that reaches followers within the organization [2]. Well developed emotional intelligence skills can help carry out the basic management functions smoothly.

LITERATURE REVIEW

Emotional intelligence is the capacity to recognize our own feelings and those of others, for motivating ourselves, and for managing emotions well in us and in our relationships. It has two competencies the personal competence and the social competence. The personal competence consists of self-awareness, self or emotion management and self motivation whereas the social competence consists of social awareness and relationship. Figure 3 shows the emotional intelligence dimensions.



Figure 3
Emotional Intelligence Dimensions

Self-awareness means knowing one’s feelings at the moment and using it for decision making, which is known as *intuition* [3]. A manager must be self aware of their:

- Goals, immediate and long-term
- Beliefs, about themselves and others
- Values, those things they hold dear
- Drivers, that affect how they work
- Rules, that they live by, the *shoulds*, *musts* and *oughts*
- Self-talk, the inner voice that tells them they *can* or *cannot* do something and the ways in which these impact on what they do and contribute to their *map of the world* [4].

Self or emotion management is the ability to regulate distressing factors such as anxiety and anger and to restrain emotional impulsivity. Competencies of self-management are emotional self control (keeping disruptive emotions and impulses in check), trustworthiness (maintaining standards of honesty and integrity), conscientiousness (taking responsibilities for personal performance), adaptability (flexibility in handling change), achievement drive (striving to improve or to meet a standard of excellence), and initiative (innovativeness and readiness to act on opportunities) [3]. Managers may choose an alternative way to feel once by understanding the existing link between the interpretation of an event and their response to it.

Self motivation involves not only knowing ourselves and staying positive, but also keeping good company. Margaret Chapman says in her EI Pocketbook (2005) that being self-motivated calls for four essential actions and one can remember them by using the acronym SAME:

- Adopt positive *Self-talk*.
- Build an effective support network (your ‘A’ team).
- Visualize an inspirational *Mentor* (real or fictitious).
- Create a motivating *Environment* (air, light, sound, visual images).

With social awareness or relationship management, a person can recognize the feelings of other people. An individual with this ability can read nonverbal cues for emotional currents from others. Social awareness competencies are empathy (understanding others’ feeling and perspectives, taking an active interest in their concerns, and cultivating opportunities through them); service orientation (anticipating, recognizing, and meeting customers’ needs); and organizational awareness (reading a group’s emotional currents and power relationships) [3]. Relationship should be defined as the interaction between two people towards mutual benefit. A manager should influence people toward the attainment of organizational goals and should

be able to manage conflicts whenever disputes or crises arise. Given that high performing teams are more likely to complete a project successfully, the promotion of improved EI to influence job satisfaction levels would therefore prove to be an important project management tool [5].

Twentieth century managers should be more than new type of leaders, they should be emotional coaches. In terms of Emotional Intelligence, being an E-coach means helping others to [4]:

- Develop their emotional capabilities
- Resolve differences
- Solve problems
- Communicate effectively
- Become motivated

Emotional coaches are emotionally intelligent managers that help develop competencies and commitment to work together.

METHODOLOGY

The methodology for this research study is based on the Boston Emotional Intelligence Questionnaire, which follows the 5 dimensional model described above (Self-awareness, Emotion Management, Self-Motivation, Relationship Management, and Emotional Coaching) [4]. This structured questionnaire uses a Likert scale system. Responses to each item are scored on a 1 to 4 points range. The surveymonkey on-line survey software was used to collect and analyze data and to draw conclusions and results.

RESULTS

The survey was responded by 29 Project Management Engineers (PMEs). Table 1 shows the distribution of these participants by gender.

Table 1
Participants Distribution by Gender

Demographics Gender		
Answer Options	Response Percent	Response Count
Masculine	79.3%	23
Feminine	20.7%	6
<i>answered question</i>		29

The age of the participants ranged from 24 to 65 with a mean of 38.21 as shown in Table 2.

Table 2
Participants Demographics: Age

Demographics			
Answer Options	Response Mean	Response Total	Response Count
Age	38.21	1,108	29
			<i>answered question</i> 29

The scores of those Project Management Engineers who responded the Boston Emotional Intelligence Questionnaire is summarized in Table 3. The mean total score was found to be 84.48.

The calculated mean score for the Self-Awareness dimension was 17.52. The participants scored a mean of 13.62 points on the Emotion Management dimension. As for the Self-Motivation construct, the respondents scored a mean of 16.63 points. In terms of the social competence, the Puerto Rican PME's scored a mean of 18.55 points on the Relationship Management dimension and 17.97 on Emotional Coaching.

Table 3
Boston Emotional Intelligence Questionnaire Scores

PME	S-A	EM	S-M	RM	EC	Total
1	18	14	16	19	19	86
2	19	14	16	20	20	89
3	17	13	17	18	18	83
4	19	15	19	19	18	90
5	18	12	15	19	19	83
6	17	14	16	19	19	85
7	18	14	15	16	15	78
8	18	13	18	20	18	87
9	19	15	17	20	20	91
10	19	14	14	19	18	84
11	19	12	18	20	18	87
12	15	10	17	18	18	78
13	16	9	16	17	18	76
14	17	13	15	19	18	82
15	20	19	18	19	18	94
16	20	13	17	19	18	87
17	16	13	16	18	20	83
18	18	16	19	19	19	91
19	15	16	19	17	19	86
20	18	17	19	20	18	92
21	20	16	19	20	17	92
22	17	10	15	19	16	77
23	14	13	17	18	16	78
24	19	11	17	14	15	76
25	13	15	19	20	20	87
26	16	12	15	18	18	79
27	19	13	17	20	17	86
28	15	14	17	16	15	77
29	19	15	15	18	19	86

The profile of the of the respondents is summarized in Table 4.

The Cronbach's alpha coefficient for the Self-Awareness dimension was found to be 0.72. After conducting an Item-Adjusted Total Correlation assessment, a 0.61 Cronbach's alpha was determined for the Emotion Management dimension. As for the Self-Motivation construct, the respondents did not score consistently enough with a 0.47 Cronbach's alpha.

Table 4
Emotional Intelligence Profile

EI Dimension	Mean Score	Cronbach's Alpha
Self-Awareness	17.52	0.72
Emotion Management	13.62	0.61
Self-Motivation	16.83	0.47
Relationship Management	18.55	0.64
Emotional Coaching	17.97	0.55
Total	84.48	-

In terms of the social competence, a Cronbach's alpha coefficient of 0.64 was determined for Relationship Management dimension and 0.55 for Emotional Coaching.

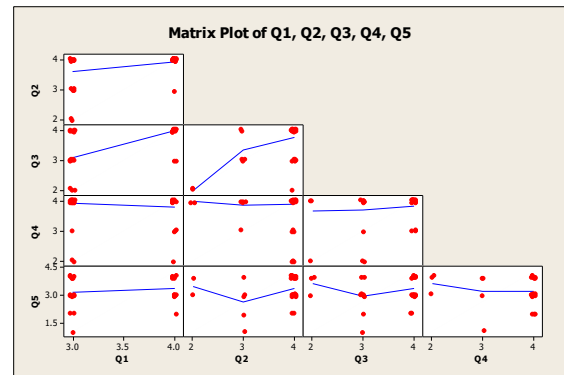


Figure 4
Self-Awareness Items Matrix Plot

Figure 4 shows the correlation between the items within the Self-Awareness construct. Item-Adjusted Total Correlation was used to assess how well one item's score was internally consistent with composite scores from all other items that remained.

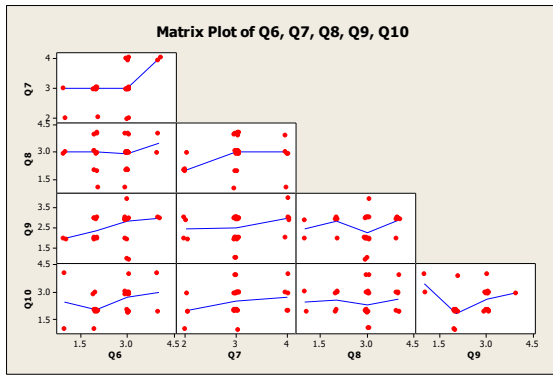


Figure 5
Emotion Management Items Matrix Plot

Figure 5 depicts the correlation between the items within the Emotion Management construct.

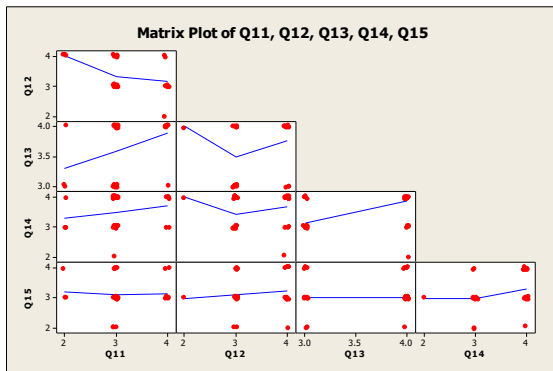


Figure 6
Self-Motivation Items Matrix Plot

Figure 6 shows how correlated the items of the Self-Motivation were found to be.

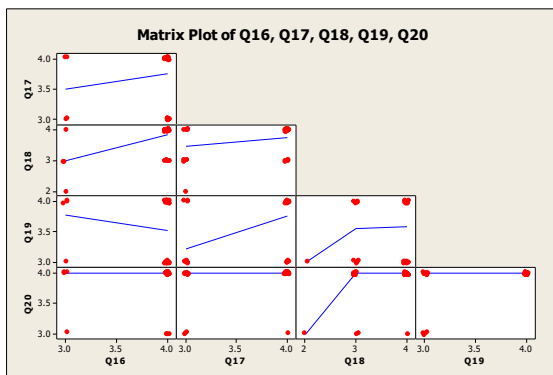


Figure 7
Relationship Management Items Matrix Plot

The correlation matrix plot for the Relationship Management construct is presented in Figure 7.

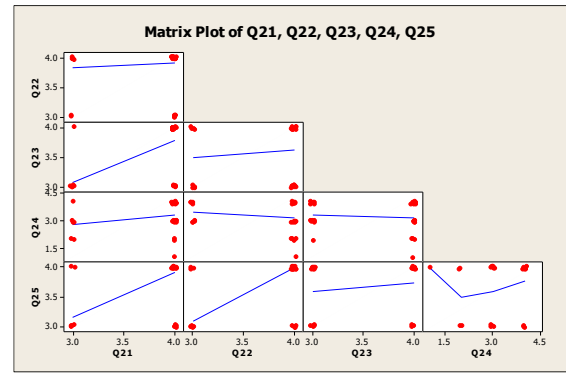


Figure 8
Emotional Coaching Items Matrix Plot

Figure 8 presents the correlations between the items in the Emotional Coaching construct.

CONCLUSIONS AND RECOMMENDATIONS

Based on the developed EI preliminary profile, the following conclusions can be made:

- Overall mean EI score indicates that Puerto Rican PME's possess good emotional intelligence skills, almost excellent.
- Although well self aware of their emotions, remedial work is necessary in order to improve how Puerto Rican PME's manage their emotions and motivate themselves.
- Puerto Rican PME's are skilled in relationship management and are excellent emotional coaches.

Regarding the statistical item analysis, the following conclusions can be made:

- The Self-Awareness items are consistent in measuring the same construct although intercorrelations can be improved.
- The Self-Motivation as well as the Emotional Coaching items should be assessed in order to achieve better internal consistency in measuring the constructs.
- The Relationship Management items proved to be of moderate to fair internal consistency.

Several recommendations can be made in terms of the Emotional Intelligence profile of the Puerto Rican PME's profile:

- In order to improve their emotion management, PMEs may develop an EI plan with well defined goals and identify actions and resources [4]. Training on surface acting should be considered, where people involve in expressing emotions that are not being felt. For example, faking a smile while hiding their true feelings. If this exercise becomes difficult, deep acting should be considered, where people try to experience the emotions that they have to express. While this method of emotion management requires more training, it can lead to better performance and greater job satisfaction. PMEs may also try alleviating negative emotions engaging with the problem at hand, reappraising situations, involve in training about pleasant thought development, or doing something active.
- Several practices can be adopted in order to improve self motivation. PMEs can take time to reflect, schedule growth producing activities, join motivational networks, redecorate their area of work in order to create appropriate motivational conditions, and reward themselves, among other things.

The following recommendations can be made in order to improve the statistical validity of the results of the questionnaire design:

- Consider assessing construct validity by comparing the results to a similar instrument.
- Consider a larger sample size equal to (1).

$$n = \left(t_{\alpha/2} s / E \right)^2 \quad (1)$$

where s is the standard deviation of the emotional intelligence overall score, α is the desired level of significance, and E is the desired error. In this case the t statistic is deemed appropriate since the sample size of the research study, 29, is relatively small, and the variance of the true overall score is unknown.

- Consider conducting hypothesis testing for dimensions and overall mean scores of Emotional Intelligence.

REFERENCES

- [1] Griffin, Ricky, W., "Fundamentals of Management", 6th edition, , Texas A&M University.
- [2] Parolini, Jeanine, L., "Investigating the Relationships among Emotional Intelligence, Servant Leadership Behaviors and Servant Leadership Culture", 2005
- [3] Sunindijo, Riza Yosia, Hadikusumo, Bonaventura, H.W., and Ogunlana, Stephen., "Emotional Intelligence and Leadership Styles in Construction Project Management", *Journal of Management in Engineering*, Vol. 23, No. 4, 166-170, 2007
- [4] Chapman M., "The Emotional Intelligence Pocket Book", 2005
- [5] Turner, R., "Determining the Impact of Emotional Intelligence in Project Management as a Measure of Performance", RMIT University, November 2007