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Investigating Leadership Styles, Behavioural and Managerial Competency Profiles of Successful Project Managers in Greece

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Abstract

This study examines the relationship between behavioural and managerial competency profiles of Project Managers (PMs) and project success in a holistic approach. The Competing Values Model (CVM) and ICB conceptualization (IPMA Competence Baseline, Version 3.0) served as the ground for the operationalisation of managerial and behavioural competencies, respectively. In this way, fifteen critical behavioural competency elements were taken into account (leadership, engagement & motivation, self-control, assertiveness, relaxation, openness, creativity, results orientation, efficiency, consultation, negotiation, conflict and crisis, reliability, values appreciation, ethics). CVM is constituted from two dimensions (Flexibility versus Stability, Internal versus External Focus), defining four quadrants (Open Systems, Human Relations, Internal Processes, Rational Model) that address distinct demands in the organizational arena. Regarding leadership, CVM has also been utilized as a device for mapping Project Managers' leadership profiles and conducting comparative analysis. The field research was based on a sample of 97 Project Managers. The crucial behavioural, managerial and emotional competency areas as well as the leadership styles contributing most to project success have been detected. The managerial implications derived justify the need for practitioners to be trained in specific categories of competencies.

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1. Introduction

Building on the behavioural, contingency and the competency school, this study aims to shed light on the compelling notion that the Project Managers' (PMs) competency profile influences the performance of their

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organization (i.e. [1,2,3,4]). Recently, the identification of the relationships between managerial success and individual attributes, as well as the investigation of the linkages between managerial performance and specific competencies has attracted research interest [4, 5].

Nowadays, the implementation of principles and techniques of Project Management (PM) has expanded rapidly in many enterprises worldwide, implying the necessity for effective project leadership. The development of similar strategic issues has been extensively investigated in numerous studies with the use of computational methods [6 – 20]. Almost 2300 years ago, Aristotle had realized the crucial role of both ‘strategos’ (leader of the army) and a political leader in their domains, and described leadership based on three elements: relationships (pathos), values (ethos), process (logos) [21]. Yet, PM literature has historically shifted its attention away from the Project Manager’s role, and his or her competencies relevant to the success of their project [22]. Moreover, PM scholars have been focused more on efficiency rather than behavioural or emotional factors [23].

On the other hand, the International Project Management Association (IPMA) has stressed that ‘competency models have become a dramatic resource in refocusing people on what it takes to succeed in today’s workplace environment’ [24]. Recently, a number of studies have recommended that different PM styles, and thus different competency profiles and leadership styles of PMs would be appropriate for different types of projects and situations [3,4,25,26,27]. In alignment with these suggestions, our study aims to investigate PMs’ profiles (behavioural, managerial, and emotional competences, and leadership style) in the Greek context in relation with project success.

2. Literature Review

2.1. *Competency school of leadership and management*

Over the last century several schools of leadership have been formulated, most of which have supported the notion that different leadership styles are appropriate in different circumstances (Muller & Turner, 2007). PM literature followed these streams of thought, although by and large PM researchers have neglected its contribution to project success [28].

Most recently the competency school of leadership emerged, which synthesizes all the preceding schools, since it considers traits, behaviours and emotional intelligence as competencies, it suggests that certain competency profiles are appropriate in different situations and it assigns competency profiles for transformational and transactional leaders.

Initially, researchers often used indiscriminately the term ‘competency’ as a synonym to ‘competence’ and vice versa. However, recent debates amongst scholars revealed their conceptual and practical distinctions in their interpretation [29]. Eventually, PM literature has reached to some compelling consensus, that the term *competency* should be defined as a person related concept referring to the dimensions of behavioural action supporting competent performance, while *competence* relates to an individual’s ability to meet a range of externally agreed standards [30,31,32]. However, we adopted Young’s [33] view that these two discrete concepts may also be complimentary.

Building on an extensive literature review of leadership theories, Dulewicz and Higgs [1,34] advocates of this school, clustered fifteen leadership dimensions into three groups, namely intellectual (IQ), managerial (MQ) and emotional (EQ) competencies. They concluded that three different leadership styles are appropriate in organizational change projects. In a similar vein, a number of studies based on the competency school have investigated the competency profiles of effective leaders or managers [3,25,26,35,36]. All these studies converge that different leadership competency profiles are in fact related to leadership success in different contents. Moreover, the soft factors of leadership often emerged as the most important attributes of successful managers in all types of projects [3,27]. Thus, we developed the following research question:

What competency (behavioral, managerial and emotional) and leadership profiles are exhibited by the PMs in successful projects?

2.2. Behavioural Competencies

15 behavioural competence elements have been recommended in PM practice [37], which are relevant to the profession of Project Management and in the context of the project. Their importance can differ depending on the situation. These behavioural competency elements are listed and analysed as follows:

1. *Leadership* refers to patterns of behaviour as well as attitudes about communication, conflict resolution, criticism, teamwork, decision making and delegation.
2. *Engagement* with and motivation of the project manager and the team members reflect the personal buy-in from all individuals associated with the project.
3. *Self-control or self-management* mirrors a systematic and disciplined approach to deal with daily routine as well as stressful situations.
4. *Assertiveness* involves the ability to state views persuasively and authoritatively taking into consideration their impact on decision making and consequently on project success.
5. *Relaxation* is focused on the relief of tension in difficult situations in order to re-energise individuals.
6. *Openness* refers to the cultivation of an open climate among individual so as to benefit from their input, suggestions, worries and concerns, avoiding discrimination on the grounds of age, gender, sexual orientation, religion, cultural differences or disability.
7. *Creativity* describes the ability to think and act in original and imaginative ways in order to achieve project success.
8. *Results orientation* outlines project team's attention on key objectives to obtain the optimum outcome for all the parties involved.
9. *Efficiency* refers to the efficient allocation and exploitation of all resources available to the project.
10. *Consultation* is focused on rational decision making and solid arguments presentation in order to find solutions.
11. *Negotiations* establish the means by which the involved parties can resolve disagreements towards a mutually satisfactory solution.
12. *Conflict and crisis* in a project can be described as a time of acute difficulty, demanding risk analysis and scenario planning in order to handle these obstacles.
13. *Reliability* reflects the ability to meet time and quality project's specifications.
14. *Values appreciation* is based on mutual respect and on the receptiveness of others' opinions, value judgements and ethical standards.
15. *Ethics* embraces the morally accepted conduct or behaviour representing personal and professional freedoms as well as boundaries.

2.3. Competing Values Model (CVM)

The Competing Values Model (CVM) evolved from the work of Quinn and Rohrbaugh [38] as they attempted to circumscribe a generally agreed upon theoretical framework of the concept of organizational effectiveness. This framework was chosen for this study, because it was experimentally derived and found to have a high degree of face and empirical validity in comparison with other instruments commonly used in organizational sciences [39,40,41]. The CVM has also been utilized as a device for mapping organizations' leadership profiles and conducting comparative analysis [42]. It is constituted from two dimensions (flexibility versus control, and internal focus versus external focus), defining four quadrants, namely: Open Systems, Rational Goal, Internal Processes and Human Relations. These four quadrants also define four leadership styles (adaptive, task, stability

and people leadership) and eight leadership roles [42,43]. It should be stressed out that the diagonal quadrants produce conflicting or competing values. For example, the values in the Open Systems Model (upper right quadrant) emphasize an external focus concerned with flexibility and growth, while the values in the Internal Processes Model (lower left quadrant) accentuate an internal focus with control and stability.

Cameron and Quinn [40] developed an instrument to assess individual effectiveness based on the four CVF models and consolidated a list of successful leadership skills into a set of 12 managerial competency categories. In particular, Open Systems Model involves managing the future, promoting continuous improvement, and fostering innovation, Rational Goal Model is comprised of managing competitiveness, energizing employees and focusing on customer service, Internal Processes Model is consisted of managing acculturation, controlling the system and coordination, and Human Relations Model considers the management of interpersonal relationships, teamwork and personal development.

3. Methodology

3.1. Research design

The field research² was conducted using a structured questionnaire, which was developed to measure 'behavioural competencies' based on the work of ICB-IPMA Competence Baseline [37]. In addition, Quinn and his colleagues' instruments for conceptualizing managerial competencies (MSAI) and leadership styles/roles were also adopted [40,44,45]. The four dimensions of emotional intelligence view suggested by Goleman et al. [46] to reflect personal (self-awareness, self management) and social (social awareness, relationship management) competencies were operationalized into our research tool. The project's success scale adopted was validated by several researchers [26].

The research instrument was tested twice before it was released. Firstly, it was examined by ten PMs from consulting, construction and engineering companies. Secondly, it was provided to academics for in depth discussions. This process was fruitful, since they commented and finally confirmed the cognitive relevance of the items comprised the final competency questionnaire. It must be stressed that this paper provides the results of an ongoing field survey, thus the findings of this research must be treated with caution because of the relative small sample size and its limited representativeness of the respective population. Data analysis was based on 97 total valid questionnaires, resulting to response rate of 24.2%. Almost 24% of the respondents were female. The majority of the respondents (62%) have a working experience of more than 11 years. The 43% of the sample were entitled as PMs. The 64% were engaged at more than three out of the five stages of their project's life cycle (feasibility, planning, execution, close-out, commissioning). The 46% of the respondents were between 35 and 45 years old. The 66% of the sample holds post-graduate degrees. The majority of the sample belongs to the higher (44%) or middle (44%) hierarchical levels of their organization. The 42% of the respondents were involved in organizational change projects, 38% in construction projects, and 58% in private sectors' projects. The majority of the sample was engaged in projects with medium levels of complexity (60%) and 22% of the respondents have been Certified PMs.

3.2. Internal reliability of subscales

² Some preliminary results at the early stages of the field research (N= 30 valid questionnaires) referring to the relationship between behavioural competencies and individual effectiveness were presented at the PM-05 ICPM [Trivellas P., Drimoussis C., (2010). Skills and competencies of project managers, 5th Inter. Conf. in Project Management, *Concepts, Tools & Techniques for Managing Successful Projects*, May 29-31, Heraclion, Crete, Greece, p.735, available at <http://www.baufachinformation.de/aufsatz.jsp?ul=2010101001827>].

Cronbach's alpha coefficients were calculated to assess the reliability of all sub-scales. All constructs exhibited Cronbach's alpha scores greater than the minimum acceptable level of 0.70 [47]. The problem of common method variance (CMV) is often found in self-reported surveys, therefore, Harman's one-factor test was conducted to ascertain the reliability of the measures [48]. Principal component analysis of scales confirmed that CMV does not pose a serious threat to this study.

Table 1. Results of reliability analysis of all scales.

	Items	CR		Items	CR		Items	CR
Behavioural Competences (BC)			Managerial Competencies (MC)			Leadership styles (LS)		
Leadership (LEAD)	13	0.83	Interpersonal relationships (IREL)	4	0.76	Adaptive (ADAPT)	4	0.74
Engagement & Motivation (ENGM)	7	0.76	Teamwork (TEAM)	4	0.70	Task (TASK)	4	0.75
Self-control (SCONT)	8	0.76	Personal development (PDEV)	4	0.84	Stability (STAB)	4	0.78
Assertiveness (ASSERT)	8	0.83	Managing the future (FUT)	4	0.93	People (PEOP)	4	0.70
Relaxation (RELAX)	7	0.77	Promoting continuous improvement (CONT)	4	0.91	Emotional Intelligence (EI)		
Openness (OPEN)	10	0.88	Fostering innovation (INNOV)	4	0.85	self-awareness (SLFAW)	5	0.70
Creativity (CREAT)	5	0.86	Competitiveness (COMP)	4	0.83	self management (SLFMGT)	5	0.73
Results Orientation (RESO)	4	0.70	Energizing (ENERG)	4	0.77	social awareness (SOCAW)	5	0.70
Efficiency (EFFIC)	8	0.81	Customer service (CUST)	4	0.80	relationship management (RELMGT)	5	0.82
Consultation (CONSULT)	8	0.73	Acculturation (ACCULT)	4	0.73	Project's success	23	0.94
Negotiation (NEG)	6	0.72	Controlling the system (CONS)	4	0.84			
Conflict & Crisis (CONFC)	6	0.80	Coordination (COORD)	4	0.80			
Reliability (RELIAB)	4	0.70						
Values appreciation (VALA)	10	0.88						
Ethics (ETHIC)	5	0.73						

The Kaiser–Meyer–Olkin (KMO) indicator was calculated to assess sample size adequacy, exceeding the minimum acceptable value of 0.5. Bartlett's test of sphericity is significant at $p < 0.001$ for all scales. Valid N= 97. (CR: Cronbach's Alpha)

4. Results

The objective of our study is to identify Project Managers' (PMs) profiles associated with project success against those in less successful projects. Independent samples t-test analysis was used to assess the statistical significance of the differences between groups of PMs with high and low levels of project success, across their

behavioural, managerial and emotional competencies, as well as their leadership style. Results of paired t-test analysis comparing the means of each sub-dimension are exhibited in Table 2, indicating each group's high and low value, difference and level of significance of each paired comparison. Graphical visualizations of PMs' behavioural and managerial competency profiles are presented in figure 1.

Regarding the behavioural competencies, PMs in successful projects considered ethical values, openness and reliability as the most dominant ones, while relaxation, creativity and results orientation are the least exhibited. All behavioural competencies of successful PMs are found to be statistically different compared to those realized in less successful projects. In particular, wider gaps were detected across competencies related to efficiency, values appreciation and openness.

Table 2. : Results of paired t-test analysis among competencies of high and low level of project's success.

	High	Low	Dif.	Sig.(t-test)		High	Low	Dif.	Sig.(t-test)
BC-LEAD	5.86	5.08	0.78	p<0.001	MC-IREL	5.94	5.31	0.63	p<0.01
BC-ENGM	5.72	4.94	0.78	p<0.001	MC-TEAM	5.92	4.38	1.54	p<0.01
BC-SCONT	5.63	5.02	0.61	p<0.01	MC-PDEV	5.63	4.86	0.77	p<0.05
BC-ASSERT	5.91	5.09	0.82	p<0.001	MC-FUT	5.50	4.29	1.21	p<0.01
BC-RELAX	5.37	4.76	0.61	p<0.01	MC-CONT	6.14	5.01	1.13	p<0.01
BC-OPEN	6.10	5.19	0.91	p<0.001	MC-INNOV	5.90	4.92	0.98	p<0.001
BC-CREAT	5.44	4.89	0.55	p<0.05	MC-COMP	4.75	4.25	0.50	n.s.
BC-RESO	5.52	5.08	0.44	p<0.05	MC-ENERG	5.05	4.06	0.99	p<0.01
BC-EFFIC	5.82	4.81	1.01	p<0.001	MC-CUST	5.56	4.16	1.40	p<0.001
BC-CONSULT	5.66	5.10	0.56	p<0.01	MC-ACCULT	5.83	4.74	1.09	p<0.001
BC-NEG	5.82	5.08	0.74	p<0.001	MC-CONS	5.28	3.92	1.36	p<0.001
BC-CONF	5.94	5.25	0.69	p<0.001	MC-COORD	5.48	4.44	1.04	p<0.001
BC-RELIAB	6.10	5.46	0.64	p<0.001	LS-ADAPT	5.50	4.50	1.00	p<0.001
BC-VALA	5.84	4.90	0.94	p<0.001	LS-TASK	5.57	4.47	1.10	p<0.001
BC-ETHIC	6.46	5.66	0.80	p<0.001	LS-STAB	5.41	4.39	1.02	p<0.001
EI-SLFAW	6.21	5.54	0.67	p<0.01	LS-PEOP	5.86	5.14	0.72	p<0.001
EI-SLFMGT	5.65	5.00	0.65	p<0.05					
EI-SOCAW	5.73	4.71	1.02	p<0.001					
EI-RELMGT	5.54	4.73	0.81	p<0.001					

Considering managerial competencies, promoting continuous improvement, interpersonal relationships and teamwork were ranked higher by PMs in successful projects, whereas managing competitiveness, energizing employees and controlling the system were proved to be the least performed ones. Following an almost similar pattern, all managerial competencies of successful PMs were statistically and significantly higher than those employed in less successful projects, apart from competitiveness. More specifically, wider divergence was detected at managerial competencies related to teamwork, customer service and system control. The CVM approach as a diagnostic framework of managerial competencies reveals that successful PMs are deficient in managing competitiveness and energizing employees. On the other hand, PMs in less successful projects should improve their abilities associated with teamwork, customer focus and system control to catch up with their counterparts.

Examining leadership styles, people leadership is more frequently adopted by PMs in successful projects, while stability style is relatively less performed. Utilizing CVM as a tool for personal development and

identification of individual strengths and weaknesses, PMs should strengthen their competencies reflecting innovativeness, creativity, risk taking, entrepreneurship, adaptation and resource acquisition and at the same time those related to monitoring, coordination, documentation and information management. Similarly, PMs in successful projects exhibit significantly higher scores across all leadership styles.

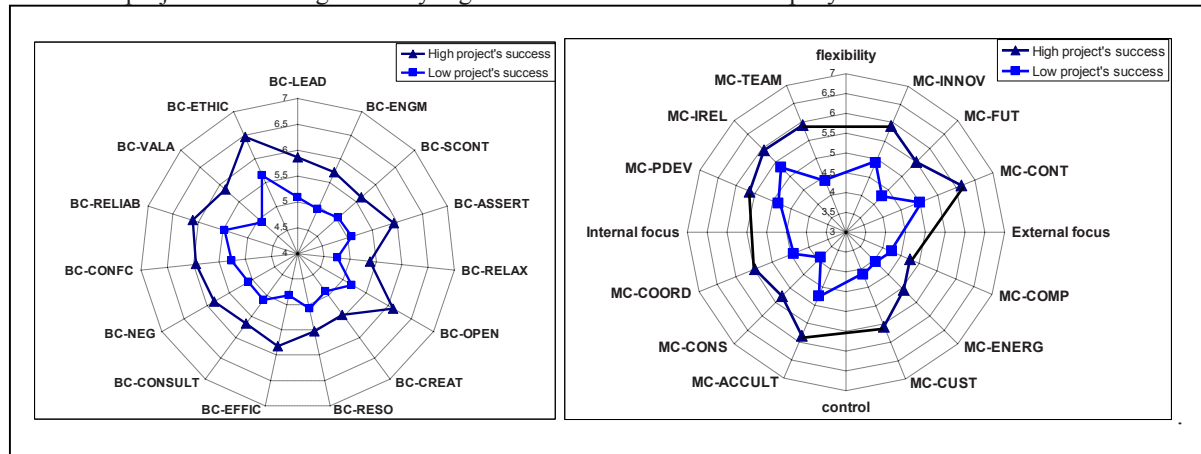


Figure 1. Behavioural and managerial competency profiles of PMs with high and low levels of project's success.

Referring to emotional competencies, PMs in successful projects exhibit high levels of self-awareness, and relatively low levels of relationship management. The wider difference between PMs in successful and less successful projects was detected for social awareness. Under a similar logic, successful PMs demonstrated significantly higher levels of emotional intelligence than their counterparts.

Furthermore, certified PMs were found to exhibit significantly higher coordination and social awareness competencies, as well as stability leadership than their counterparts ($p < 0.05$). Regarding the control variables, project's duration was negatively related to its success ($p < 0.01$), while upper hierarchy and females were associated with higher levels of project's success ($p < 0.05$).

5. Conclusions

This study aims to investigate (a) the behavioural competency profile based on the ICB-IPMA Competence framework, (b) the managerial competency and leadership profile grounded on CVM and (c) the emotional competency profile of PMs in relation to their project's success.

Results reveal that PMs equipped with a broader competency repertoire characterized by high levels of behavioural, managerial and emotional competencies enjoy greater project's success. In particular, competencies related to efficiency, values appreciation and openness (behavioural competencies), teamwork, customer service and system control (managerial), and social awareness (emotional) as well as the task leadership style proved to best highlight the gap differentiating PMs' engaged in more successful projects against their counterparts.

Furthermore, CVM may serve as a diagnostic tool, providing guidance to PMs in the identification and cultivation of the key skills and competencies that they will need to improve in order to foster individual effectiveness and project's success.

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