

# **Critical core competencies required for effective project leadership in the presence of the authority gap**

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## **Abstract**

Project management is arguably the fastest growing discipline as organisations move into the euphoria of projectification of their operations. The industry has suddenly realised the effectiveness of management-by-projects as a solution to effectively and efficiently execute operations.

Yet the process of executing a project is bedevilled by high failure rates, conflict - ridden and highly politicized because of authority gap. The matrix structure and the resultant dual loyalty by the employees and the presence of the authority gap with the project manager create the lack of direct access to resources by the project leader. The current increase in the demand for management-by-projects will translate into a demand for effective project practitioners. To date, extensive leadership studies have not provided a universal one-stop-leadership-style with clearly defined critical core competencies for effective leadership.

Findings of this research throw new light on the importance of empowerment of the project manager, interpersonal relationship skills, extroversion, genuineness of senior management, and the responsiveness of the project leaders as indispensable must haves. These critical competencies will therefore facilitate the project execution process and allow the empowered project leader the ability to reduce the high project failure rate and cut down on the high cost overruns.

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## **Key phrases**

*authority gap; competencies; followership; leadership; variables*

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## 1. INTRODUCTION

Projects have significantly unique characteristics in contemporary organisations and there is an unprecedented increase of management-by-projects by organisations. The business world, the non-for-profit organisations, the community-based undertakings show a generally higher increase in the proliferation of management-by-projects. The increase in Research and Development and process redesigning to improve operational effectiveness (Knipe, Van der Waldt, Van Niekerk, Burger & Nell 2008:52) have fuelled the *projectification* of business. McShane and Von Glinow (2009:146) describe these operations as characterized by the presence of multi-skilled temporary teams established as effective means to solve problems. Karwowski (2010:36) argues that organisations with such processes acknowledge the effectiveness of certain project management competencies not in the traditional routine management processes.

## 2. LITERATURE REVIEW

Simultaneously there is an increasing academic interest to study project management and the role of all variables in the success or failure of project management processes. Müller and Turner (2006:21-32) define projects as unique once-off multi-dimensional organisation-integrating processes allowing for cross-functional multi-skilling of the project practitioners instead of the organisational units.

The interests that academic show in projects and project management is largely triggered by the need to understand the structures and the dynamics of the once-off unrepeatable undertakings that a project is. Through their definition of a project, the academics indicate that the experience that is acquired from previous projects is not considered to be important, nor are simultaneous events and future intentions because, each project is considered as a unique once-off undertaking. However, Gray and Larson (2008:139) state that experiences learnt in one project will inevitably affect the decisions made in subsequent projects.

Some projects are embedded in a primary organisation as components of a large organisation with a permanent chain of command. Doolen, Hacker and Van Aken (2003:285-296) found out that 'projects within organisations' prohibit the project manager from deciding on the culture and modus operandi of the organisation.

## 2.1 The development of the concept of authority gap

The matrix structure is functional because it has a strong project focus, is efficient and flexible with the ability of seconded subordinates to return to their departments when the project is completed (Larson & Gray 2011:76). It, however, has serious weaknesses that are characterised by conflicts due to dual loyalty, fighting over resources (between the project leader and departmental heads). It violates the management principle of unity of command, resulting in the disempowerment of the project manager. Bureaucratic structures also cause serious delays in the decision-making processes.

The project manager must function within the power and politics mix that results from the authority gap. The power paradigm in project leadership is complicated by the positioning of a project leader without direct authority over subordinates. This discrepancy between high formal responsibility and low formal authority (Nicholas & Steyn 2012:503) is referred to in this study as the authority gap as it severely limits the project manager's power. The absence of direct formal authority threads through all projects regardless of their size, type and structure except for owner managed projects. In this study all projects, regardless of their simplicity or complexity, are analysed according to past experience, politics during the pre-project phases, courses of events during project execution, ideas about the post-project future, institutionalised norms for embedded projects, external factors that influence the processes, and the inherent authority gap within which a project manager functions.

## 2.2 Factors that influence the success and failure of project management

Project leadership is the key human element in project execution threading through all types of projects. Research reveals the project manager's job as unique, difficult and complex because of the authority gap (Brown & Hyer 2010:3). Hence the study of critical competencies is required by project leaders who are confronted with conditions of uncertainty, the authority gap, the constraints from the project complexity, specific customers' expectations, iron triangle limitations and the newness of the undertaking (Burke 2010: 265). Regardless of the level of technology and the presence of highly sophisticated equipment, Baccarini, Salm and Love (2004:286-295) observed a high failure rate in the management of projects for which no adequate explanation can be given. The possible causes summarised from a wide variety of contemporary literature are highlighted below:

- **Unmet clients' needs.** Too often the clients' expectations are not understood and the project managers fail to satisfy them.
- **Inadequate feasibility study.** Feasibility studies for too many projects are inadequate or done before the project manager is appointed.

- **Unclearly defined scope.** Too many things taken for granted and no proper scope definition, leading to unsatisfied customers and excessive costs.
- **Project costing.** Improper project costing may result in cost overruns or inadequate finance, leading to the failure in completing the project.
- **Time needed to complete.** Too many projects are compressed unrealistically into too short a time for adequate execution.
- **Supplies procurement.** Procurement is not properly managed through getting wrong or inadequate supplies.
- **Inadequate resources.** Inadequate resources in the form of finance, human resources or technology appropriate for the execution.
- **Inadequate team leadership.** The absence of appropriate project leadership which may lead to the failure of the project.
- **ill-defined quality standards.** Unrealistic or not clearly defined and agreed upon quality standards which will create conflicts with customers.
- **Absence of vision and direction.** The absence of visionary leadership that will give proper direction during project execution.
- **Stakeholders' role.** The absence of clearly defined stakeholder role and interests may result in conflicts or interruptions of operations.
- **Poor communication.** The failure to communicate relevant information appropriately and in time affects operations.

Cooke-Davies (2002:185-190) identified the following factors which lead to the success of project management: the leadership style in relation to project type, effective management of project scope, effective management of time schedules, understanding project risks and plan, adequate resource and cost control, clarity of mission and objectives to stakeholders, use of appropriate tools and techniques for project type and stakeholder management during execution.

Project success occurs is when the project undertaking meets the scope, time, cost and quality stipulations to the satisfaction of the customer (Chan, Scott & Chan 2004:153-155), whereas successful project management occurs when there is successful coordination of all activities, resources and delivering the correct product to the satisfaction of internal stakeholders. The effectiveness of the project leader is therefore a function of his / her ability to balance these challenges and make the best in the presence of an authority gap (Cooke-Davies 2002:185-190).

### 2.3 The critical core competencies

The ability to function is derived from the extent of authority allowed the manager, ability to network, closeness to senior management, political connections, negotiating skills or the ability to be persuasive. According to Alam, Gale, Brown and Khan (2010:495 - 516) technical knowledge is necessary to give direction and allow for proper analysis of the type of deliverables needed, but the process to the deliverables is a human function for which soft skills are considered critical.

In this study the following elements have been considered to have substantial effect in project management:

- **Communication:** Turner and Müller (2004:327-336) give pre-eminence to communication as pivotal to all the processes that take place in a project. Communication can be verbal, oral and formal or informal. Project communication - critically links people, ideas and information in order to achieve success. It entails communication and distribution plans, performance evaluation reporting and administrative closure. Project leadership, which is preferable to project management, demands an unparalleled communication paradigm.
- **Personality:** The personality of an individual may be interpreted as the form of self-confidence, intelligence, cognitive abilities and possibly the readiness to interact. The extent to which a person is agreeable and how focused they are on their set objectives may also add to their positive side of the personality (Himmerich 2007:17 - 20). These, and many other attributes will make the personality of a person critical for effective leadership.
- **Networking:** Brown and Hyer (2010:219) consider networking as a critical tool for effective project leadership, both within the team and with stakeholders and for creating a good understanding that will promote a good support structure. These authors emphasise another secondary but critical benefit of networking, that of learning and passing of knowledge from person to person effectively. The ability to network is a positive sign of effective project leadership in that it creates an environment of cooperation amongst the participants.
- **Interpersonal relations:** Primarily a relationship between two or more people is based on mutual understanding with common goals and objectives (Brown and Hyer 2010:214). Given the nature of project management, in particular, and leadership in general, good relationships with workmates enable the leader to gain loyalty and

support. Thus, good interpersonal (soft) skills are indispensable in leadership, since leadership involves influencing people to work towards the attainment of objectives.

- **Knowledge areas:** The current project management knowledge is a practitioner-driven theory emerging from practical past and present experiences. There are nine knowledge areas that have been identified for project management. These range from time management, cost management, risk management, purchasing management, quality management, integration management, scope management, human resource management and communication management (Burke 2007:24).
- **Forms of power and their sources:** The single most difficult part of project execution is the management of the human resource element (Tatikonda & Rosenthal 2000:401-425). The powers which are used by leaders are referent, expertise, legitimate power. Leaders get work done by influencing people through power, and power is the ability to influence people to get work done (Bagrain, Cunningham, Potgieter & Viedge 2007:199) and (Hellriegel, Slocum, Jackson, Amos, Klopper, Louw & Oosthuizen 2009:287).

Power can be divided into two forms, formal power and personal power (Robbins 2005:392).

It is this personal or informal power which is critical for a project leader since, the leader has little or no formal power. Personal power is derived from expertise, reputation, charisma and cognitive persuasive ability and it is within the individual and relates directly to the personality of the individual leader. This power is the competency that this research is about. According to Hellriegel *et al.* (2009:287) the basics of effective leadership include both the core leader competencies and a willing followership.

In the presence of the authority gap, the project leader resorts to personal power as an operational tool. It is the latter that relates to the person of the project leader that is under study, because leadership without formal power complex demands unique competencies.

- **Emotional intelligence:** The emotional intelligence is another critical element of leadership which relates specifically to one's ability to know and understand their emotions and those of other people (Burke & Barron 2007:248). It is associated with self-awareness, self-management, social awareness and good relationship management. These attributes are expected to be of critical importance in project management due to high levels of uncertainty in project leadership. However, it has become more evident that project success cannot be attained by a technical skill set alone. This study sought to establish generic competencies inclusive of all types, sizes,

forms to manage complexities of projects which would apply in the generic sense to all projects.

Strategic issues to be addressed should relate to the key strategic components of the success of the project, for instance, the emotional intelligence of the leadership, the cultural practices, implicit nature of leadership given the racial dynamics and diversity issues in the South African context.

The effectiveness of the project manager is judged on the basis of how a person relates, balances these challenges and seeks to make the best leadership impact in the presence of an authority-gap. Little focus was previously put on the leadership effect in project execution and the effect that leadership can have on project team leaders and management (Gillard 2009:723-729).

### **3. PROBLEM STATEMENT**

The project manager performs an integrative function that cuts across the organisational 'silos' to coordinate human and material resources. Summarising the preceding literature, the researchers found that project managers in a matrix have little formal power. That is why they need cognitive persuasive power which uses logic and consistency to get cooperation from stakeholders.

The absence of formal power (absence of control) demands a different way of influencing people to cooperate. Tools, techniques and competencies that do not reside with traditional management systems have to be created to facilitate effective execution of the project. This study seeks to identify the competencies which should be resident in a project manager as pre-determinants of possible effective project leadership.

### **4. RESEARCH QUESTIONS**

The following research questions are derived from the preceding literature and problem statement:

- What competencies are effective in promoting all forms of project leadership?
- What competencies are required to reduce the authority gap in project leadership?

## 5. RESEARCH OBJECTIVE

The research seeks to identify and construct a model of critical core competencies for effective project leadership. The model should pronounce on what will reduce the high project failure rate to assist industry as all organisations seem to be moving towards *projectification* of their operations. In the presence of the authority gap, it will be important to study, understand, know and utilise the knowledge to identify the cause and effect that will result in effective project management. Therefore, primary objective of the study is to add to the existing knowledge by identifying indispensable competencies that will reduce the authority gap and promote effective project execution.

## 6. THE RESEARCH METHODOLOGY

### 6.1 Research design

The plan included the construction of the research instrument (questionnaire), training of the interviewers, conducting interviews amongst the project practitioners, cleaning and editing of the data, codification of the data, data capturing, data analysis of the records. The nature of the research demanded a particular approach of data collection, as such both quantitative and qualitative methods were used. The plan of the investigation and the structure of the research problem were clearly stated and were repeated to the interviewers and the team at large from the beginning of the research project until the final processes were completed.

### 6.2 Target population

The population consist of project practitioners such as project managers, project team members, and other stakeholders involved in the day to day project implementation. The requirement was that these people be directly involved in the execution of projects and therefore have first-hand experience of what they perceive to be the core strategic leadership competencies for effective project leadership.

### 6.3 Sampling frames, sampling and sample size

The sample frame in this study is constituted by the correct list of the population members directly involved in project management as either project managers or team members and stakeholders. The total number of questionnaires which were received were 451, of which 8% (36) were spoilt and 92% (415) were used for the analysis. This was considered a large enough sample from which to make significantly reliable deductions (Bartlett, Kotrlik & Higgins 2001:43-50). Large samples reduce the margin of error especially where



generalisations are to be made. Welman, Kruger and Mitchell (2008:71) state that the larger the sample the lower the standard deviation.

#### **6.4 Research instrument**

The research instrument was pretested amongst twenty practitioners before it was sent to a statistician who assisted with the final designing of the questionnaire. The pretesting was done specifically to improve the validity and reliability of the instrument in response to the research questions as listed above. A questionnaire comprising of 100 items was designed. All questionnaire items were linked to a five-point Likert-type scale. The items per variable is apportioned as follows: Communication: 8; Personality: 8; Interpersonal relations:10; Power: 6; Networking: 9; Emotional intelligence: 11; Knowledge areas: 11; Project requirements: 8; Authority gap: 20 and 9 items relating to demographic profile of the respondents.

The focus of the questions in the questionnaire was specifically on generic project leadership competencies and leadership styles that can be used to reduce the authority gap. Direct interviews were conducted by a group of part-time Bachelor of Technology (Project Management) students who administered these at their work places.

### **7. DATA ANALYSIS**

The data collected was cleaned and edited (the questionnaires) for any errors, coded and analysed, and the process involved descriptive statistics followed by calculating descriptive measures. The services of a statistician were utilised throughout the process and procedures that were followed in order to produce results that responded to the research questions. The objectives were to test the goodness of the data, and use the results to answer the questions in the questionnaire.

### **8. EMPIRICAL EVALUATION OF CRITICAL CORE COMPETENCIES**

The data analysis commenced with the reporting of the reliability and validity assessments of the questionnaire that was used to measure each factor. The results of the factor analyses are presented and followed by the regression analysis and correlations that represent the hypothesised relationships. The goals of the study were to measure the perceptions of project practitioners regarding communication, leadership style, interpersonal relations, personality, knowledge areas, form of power, emotional intelligence, networking, as well as the impact of the project leader's competencies in the reduction of authority gap.

## 9. RELIABILITY OF THE MEASURING INSTRUMENTS AND DESCRIPTIVE STATISTICS

The statistical package SPSS version 14.0, STATISTICA (Version 10) and AMOS 19.0 computer package were used to assess the internal reliability and discriminant validity of the measuring instruments. Tests were conducted in order to confirm that the scales used to measure the variables were nominal.

The internal consistency of each of the factors was assessed and the Cronbach's alpha value of >0.7 was considered a sufficient standard of reliability for the study (Joshi, Chen & Lim 2009:982). Cronbach's alpha values for all the scales were between 0.7 and 0.9. Table 1 illustrates these findings.

**TABLE 1: Cronbach alpha values of measuring instruments: Theoretical model**

Measuring instrument	Cronbach alpha values
Communication (CO)	0.85
Leadership style (LS)	0.84
Interpersonal relations(IR)	0.79
Personality (PE)	0.87
Knowledge areas (KA)	0.90
Power (PO)	0.78
Emotional intelligence (EI)	0.92
Networking (NT)	0.88
Project leadership (EPL)	0.87
Authority-gap reduction (AR)	0.88

Source: Researcher's own construction based on questionnaires

In conclusion, the study retains all of the above since their Cronbach alphas were above the cut-off point. Table 2 indicates the descriptive statistics of the various factors tested in this study. It summarises the mean scores for each of the twelve variables on the five-point Likert-type ordinal scale. As is indicated in Table 2, respondents perceived effective project leadership, ( $M = 4.11$ ), as highly required to reduce the authority gap; that effective project leadership is improved by management competencies; that personality was critical with the highest score, ( $M = 4.22$ ); emotional intelligence, ( $M = 4.11$ ), was second highest; knowledge areas, ( $M = 4.09$ ); and networking, ( $M = 4.09$ ), as the third highest, followed by leadership

style with a mean rating of ( $M = 4.08$ ). Respondents agreed to some extent that interpersonal relations, ( $M = 3.79$ ), as well as form of power, ( $M = 3.79$ ), moderately impact effective project leadership. Respondents, to some extent, perceive authority gap reduction, ( $M = 3.73$ ), as moderately influenced by effective project leadership.

**TABLE 2: Descriptive statistics for each variable: General sample response per category**

Variable	Mean	Standard deviation
Communication (CO)	3.94	0.64
Leadership style (LS)	4.08	0.57
Interpersonal relations (IR)	3.79	0.53
Personality (PE)	4.22	0.60
Knowledge areas (KA)	4.09	0.57
Power (PO)	3.97	0.61
Emotional intelligence (EI)	4.11	0.62
Networking (NT)	4.09	0.58
Project leadership(EPL)	4.11	0.60
Authority-gap reduction (AR)	3.73	0.53

[Mean score =  $M$ ]

Source: Researcher's own construction based on questionnaires

## 10. VALIDITY OF MEASURING INSTRUMENTS

Validity was verified through factor analyses to assess whether the individual items were indeed separate measures of the underlying dimensions they were supposed to measure. Factor analysis is a prototypical multivariate interdependence technique (Zikmund & Babin 2007:608) and it was used to identify a reduced number of factors from a large number of measured variables.

Factor analysis serves the cause of parsimony by reducing the multiplicity of tests and indicates what tests or measures belong together. It puts together those that measure the same variables and helps to identify unities or fundamental properties underlying tests and measures. A loading of more than 0.3 can be used to confirm validity (Joshi *et al.* 2009:984), but a higher value loading of 0.4 was used in this survey as it is significant enough for the purposes. The detailed findings are illustrated in Table 3 below.

**TABLE 3: Summary of factor loading matrix on 5-point Likert scale**

Variable	Items accepted	Minimum loadings	Maximum loadings
Communication	6	0.416	0.637
Leadership style	5	0.435	0.631
Interpersonal relations – introverts	3	0.461	0.580
Interpersonal relations – extroverts	4	0.545	0.791
Personality	6	0.423	0.673
Knowledge areas	5	0.426	0.650
Emotional intelligence	8	0.569	0.803
Stakeholder interaction	13	0.401	0.693
Effective project leadership	8	0.550	0.810
AR-Genuineness	4	0.447	0.759
AR-Empowerment	5	0.505	0.688
AR-Responsiveness	4	0.477	0.668

Note: Loadings greater than 0.4 were considered significant

Source: Researcher's own construction based on questionnaires

In Table 3 respondents did not perceive 'authority-gap reduction' as a single construct but as a three-dimension construct. The authority gap reduction was perceived as pertaining to 'genuineness of management,' 'empowerment' as related to the 'responsiveness' of the management. On the other hand, the factors measuring effective project leadership show that respondents perceived effective project leadership as a single construct. The factors loading detail is illustrated in Table 3. Dependent variable 'authority-gap reduction' split into three separate variables (genuineness, empowerment and responsiveness) of the project leader.

On the basis of these findings, hypotheses were formulated as indicated next.

#### **Hypotheses subjected to empirical verification:**

- H0<sup>1</sup> There is a relationship between communication and effective project leadership
- H0<sup>2</sup> There is a relationship between leadership style and effective project leadership
- H0<sup>3.1</sup> There is a relationship between interpersonal relations related to introverts and effective project leadership

- H0<sup>3.2</sup> There is a relationship between interpersonal relationship and effective project leadership
- H0<sup>4</sup> There is a relationship between personality and effective project leadership
- H0<sup>5</sup> There is a relationship between understanding of knowledge areas and effective leadership
- H0<sup>6</sup> There is a relationship between emotional intelligence and effective leadership
- H0<sup>7</sup> There is a relationship between stakeholder interaction and effective project leadership
- H0<sup>8</sup> There is a relationship between effective project leadership and authority-gap related to genuineness.
- H0<sup>9</sup> There is a relationship between project leader effectiveness and authority gap reduction related to empowerment.
- H0<sup>10</sup> There is a relationship between project leader effectiveness and authority gap reduction related to responsiveness.

Respondents perceived networking (NT) and type of power (PO) as a single construct and as a result did not load as separate factors, thus the two hypotheses H0<sup>7</sup> and H0<sup>8</sup> were not considered as variables in the study. The two hypotheses were modified and a new hypothesis was formulated. The structure of the empirical factor was, therefore, subjected to regression analysis. The empirical factor structure as summarised in Table 4 is subjected to regression analysis.

**TABLE 4: Empirical factor structure: influences and outcomes**

Label	Variables	Individual Items
CO	Communication	CO1, CO2, CO3, CO4, CO5,
LS	Leadership style	LS1, LS2, LS3, LS4, LS5
IR-introvert	Interpersonal relations – introverts	IR1, IR4, IR5
IR-extrovert	Interpersonal relations – extroverts	IR6, IR8, IR9, IR10
PE	Personality	PE2, PE4, PE5, PE6, PE7, PE8
KA	Knowledge areas	KA1, KA2, KA3, KA4, KA5
EI	Emotional intelligence	EI4, EI5, EI6, EI7, EI8, EI9, EI10, EI11
S-IN	Stakeholder – interaction	NT1, NT2, NT3, NT4, NT5, NT6, NT7, NT8 NT9, PO1, PO2, PO3, P4
EPL	Effective project leadership	EPL1, EPL2, EPL3, EPL4, EPL5, EPL6, EPL7, EPL8
AR-G	AR-genuineness	AR4, AR6, AR7 and AR8

Label	Variables	Individual Items
AR-E	AR- empowerment	AR10, AR11, AR12, AR15, AR16
AR-R	AR- responsiveness	AR15, AR16, AR16, AR17, AR18, AR19, AR20

Source: Researcher's own construction based on questionnaires

### 8.3 Regression analysis

Regression analysis is the study of relationships between dependent and independent variables (Albright, Winston & Zappe 2009:572) using a statistical technique. The influence of the independent variables on the dependent variables was evaluated through multiple regression. The dependent variable in this study is the effective project leadership which is presumably affected by the presence or absence of the ten independent variables.

#### 8.3.1 The influence of management competencies on effective project leadership

Table 5 shows that management competencies are positively related to effective project leadership ( $b = 0.04$ ,  $p < 0.001$ ). The  $R^2$  of 0.62 explains the 62% variability in the model as explained by the variable EPL. This means that communication, leadership style, interpersonal relations related to extroverts, personality, knowledge areas, emotional intelligence and stakeholder interaction exert a significant influence on effective project leadership.

**TABLE 5: Regression analysis: the influence of management competencies on effective project leadership**

Parameter	Regression summary for dependent variable: effective project leadership					
	Beta b*	Std. error	B	Std. error	T-value	P-value
Intercept			0.11	0.16	0.72	0.471467
CO	0.17	0.04	0.15	0.04	4.32	0.001***
LS	0.16	0.04	0.15	0.04	3.55	0.001***
IR-introvert	0.01	0.03	0.00	0.03	0.18	0.8585
IR-extrovert	0.08	0.04	0.07	0.03	2.04	0.042**
PE	0.17	0.04	0.17	0.04	4.14	0.001***
KA	0.14	0.04	0.13	0.04	3.31	0.001***
EI	0.14	0.04	0.13	0.04	3.29	0.001***
S-IN	0.16	0.04	0.17	0.04	3.81	0.001***

Regression summary for dependent variable: effective project leadership						
Parameter	Beta b*	Std. error	B	Std. error	T-value	P-value
R	R <sup>2</sup>	F	Std. error of estimate P			
79%	0.62	90,918	0.36634	p<.00000		
* = p < 0.05						
** = p < 0.01						
*** = p < 0.001						

Source: Researcher's own construction based on questionnaires

### 8.3.2 The influence of effective project leadership on dependent variables

#### 8.3.2.1 Authority-gap reduction related to management genuineness

Although effective project leadership exerts a significant influence on the authority-gap reduction related to management genuineness ( $b = 0.253$   $p < 0.001$ ), Table 6 indicates that the  $R^2$  of 0.04 explains only 4% variability in the model as explained by the variable ARG. This implies that management perceive the authority gap associated to management genuineness is more related to effective project leadership. This diminishes the relationship between the two constructs. Table 6 illustrates the findings.

**TABLE 6: Regression analysis: influence of leadership on authority-gap to genuineness**

Regression summary for dependent variable: authority-gap reduction – genuineness						
Parameter	Beta b*	Std. error	B	Std. error	T-value	P-value
Intercept			2.335	0.237	9.828	0.0001
AR-genuineness	0.206	0.046	0.253	0.0572	4.427	0.001***
ARG: R	R <sup>2</sup>	F	Std. error of P-estimate			
21%	0.04	90.605	.71887	p<0 .00000		
* = p < 0.05						
** = p < 0.01						
*** = p < 0.001						

Source: Researcher's own construction based on questionnaires

### 8.3.2.2 Authority-gap related reduction to empowerment

Table 7 shows that the  $R^2$  of 0.17 indicates that 17% of the variability in the model is explained by the variable ARE. This means that authority-gap reduction related to empowerment ( $b = 0.41$ ,  $p < 0.001$ ) has a positive relationship with effective project leadership.

**TABLE 7: Regression analysis: the influence of effective project leadership on authority –gap reduction related to empowerment**

Regression summary for dependent variables: authority-gap reduction – empowerment						
Parameter	Beta b*	Std. error	B	Std. error	T value	P-value
Intercept			2.19	0.18	12.17	0.000000
AR-empowerment	0.41	0.04	0.41	0.04	9.51	0.001***
ARE: R	R2	F	Std. error of	P estimate		
41%	0.17	90.501	0.54409	P<0 .00000		
* = $p < 0.05$						
** = $p < 0.01$						
*** = $p < 0.001$						

Source: Researcher's own construction based on questionnaires

### 8.3.2.3 Authority-gap reduction related to management responsiveness

Table 8 shows that the  $R^2$  of 0.09 which indicates that 9% of the variability in the model is explained by the variables ARR. This means that authority-gap reduction related to management responsiveness ( $b = 0.36$ ,  $p < 0.001$ ) has a positive relationship with effective project leadership.

The t - values of independent and dependent variables can be comprehended as shown in Tables above. The high t-values of the dependent variables indicate that effective project leadership has a strong impact on the authority-gap reduction relating to the empowerment of management with a high t-value ( $t = 9.51$ ) as shown in Table 7.

Table 8 also shows a strong impact on the authority-gap reduction relating to management responsiveness with a high t-value ( $t = 6.60$ ) followed by the t-value of 'authority-gap reduction relating to genuineness of management' with a moderately high t-value ( $t = 4.43$ ) as indicated in Table 6.



**TABLE 8: Regression analysis: the influence of effective project leadership on authority-gap related to management responsiveness**

Regression summary for dependent variables: authority-gap reduction – responsiveness						
Parameter	Beta b*	Std. error	B	Std error	T value	P-value
AR-responsiveness	0.30	0.05	0.36	0.05	6.60	0.001***
AR: R	R2	F	Std. error of P estimate			
30%	0.09	43.530	0.66757 p<0 .00000			
* =p<0.05						
** =p<0.01						
*** =p<0.001						

Source: Researcher's own construction based on questionnaires

Table 5 shows that management communication has a stronger influence on the effectiveness of the project leadership with an acceptable t-value (t = 4.32) followed by 'personality' with a t-value (t = 4.14), 'stakeholder interaction' with a t-value (t = 3.81) followed by 'leadership style' (t = 3.55) and 'knowledge areas' (t = 3.31) as well as 'emotional intelligence' with a moderate to low t-value (t = 3.29) moderately impacting effective project leadership. Notably, is the weak impact of 'interpersonal relations related to extrovert management' on 'effective project leadership' (t = 2.04). The next set of values is reported in Table 9.

**TABLE 9: Correlation analysis**

	Mean	Std Dev	CO	LS	IRI	IRE	PE	KA	EI	SI	EPL	ARG	ARE	ARR
C O	3.94	0.64	1.00											
LS	4.08	0.62	0.63	1.00										
IRI	3.41	0.69	0.22	0.23	1.00									
IR E	4.08	0.69	0.39	0.54	0.24	1.00								
P E	4.31	0.59	0.41	0.54	0.20	0.50	1.00							
K A	4.08	0.63	0.39	0.55	0.22	0.48	0.64	1.00						
EI	4.08	0.64	0.49	0.57	0.21	0.52	0.57	0.59	1.00					
SI	4.05	0.57	0.47	0.52	0.26	0.48	0.55	0.56	0.64	1.00				

	Mean	Std Dev	CO	LS	IRI	IRE	PE	KA	EI	SI	EPL	ARG	ARE	ARR
E P L	4.12	0.59	0.57	0.65	0.24	0.54	0.63	0.61	0.64	0.63	1.00			
A R G	3.40	0.72	0.12	0.14	0.38	0.09	0.04	0.12	0.11	0.26	0.18	1.00		
A R E	3.91	0.57	0.27	0.41	0.24	0.34	0.38	0.35	0.36	0.45	0.38	0.49	1.00	
A R R	3.86	0.70	0.25	0.28	0.24	0.25	0.23	0.26	0.30	0.37	0.30	0.41	0.47	1.00

Source: Researcher's own construction based on questionnaires

Table 9 shows that CO is positively correlated to EPL with a coefficient of 0.57, LS is positively correlated to EPL with a coefficient of 0.65 and IRE has a significant positive correlation with a coefficient of 0.54. Although findings indicate that there is a significant positive correlation between IRI (interpersonal relations related to introverts) and EPL (effective project leadership), the strength of the relationship is weak with a correlation coefficient of 0.24. PE is positively correlated to EPL with a coefficient of 0.63 and KA is positively correlated to EPL with a coefficient of 0.61. EI is positively correlated to EPL with a coefficient of 0.64. Furthermore, SI is positively correlated to EPL with a coefficient of 0.63.

## 11. FINDINGS ON THE REFORMULATED HYPOTHESES

**H0<sup>1</sup>: There is a relationship between communication and effective project leadership**

Table 5 reported a statistically significant positive relationship between communication and effective project leadership ( $p < 0.001$ ). H0<sup>1</sup> is accepted.

**H02: There is a relationship between leadership style and effective project leadership.**

Table 5 reported a statistically significant positive relationship between leadership style and effective project leadership ( $p < 0.001$ ). H0<sup>2</sup> is accepted.

**H03.2: There is a relationship between interpersonal relations related to extroverts and effective project leadership**

Table 5 reported a statistically significant positive relationship between interpersonal

relations related to extroverts and effective project leadership ( $p < 0.04$ ).  $H0^{3.2}$  is accepted.

**H04: There is a relationship between personality and effective project leadership**

Table 5 reported a statistically significant positive relationship between personality and effective project leadership ( $p < 0.001$ ).  $H0^4$  is accepted.

**H05: There is a relationship between understanding of knowledge areas and effective leadership**

Table 5 reported a statistically significant positive relationship between knowledge areas and effective project leadership ( $p < 0.001$ ).  $H0^5$  is accepted.

**H06: There is a relationship between emotional intelligence and effective leadership**

Table 5 reported a statistically significant positive relationship between emotional intelligence and effective project leadership ( $p < 0.001$ ).  $H0^6$  is accepted.

**H09: There is a relationship between stakeholder interaction and effective project leadership.**

Table 5 reported a statistically significant positive relationship between stakeholder interaction and effective project leadership ( $p < 0.001$ ).  $H0^9$  is accepted.

**H010.1: There is a relationship between effective project leadership and authority-gap reduction related to genuineness.**

Table 6 reported a statistically significant positive relationship between effective project leadership and authority-gap reduction related to genuineness ( $p < 0.001$ ).  $H0^{10.1}$  is accepted.

**H010.2: There is a relationship between project leader effectiveness and authority-gap reduction related to empowerment.**

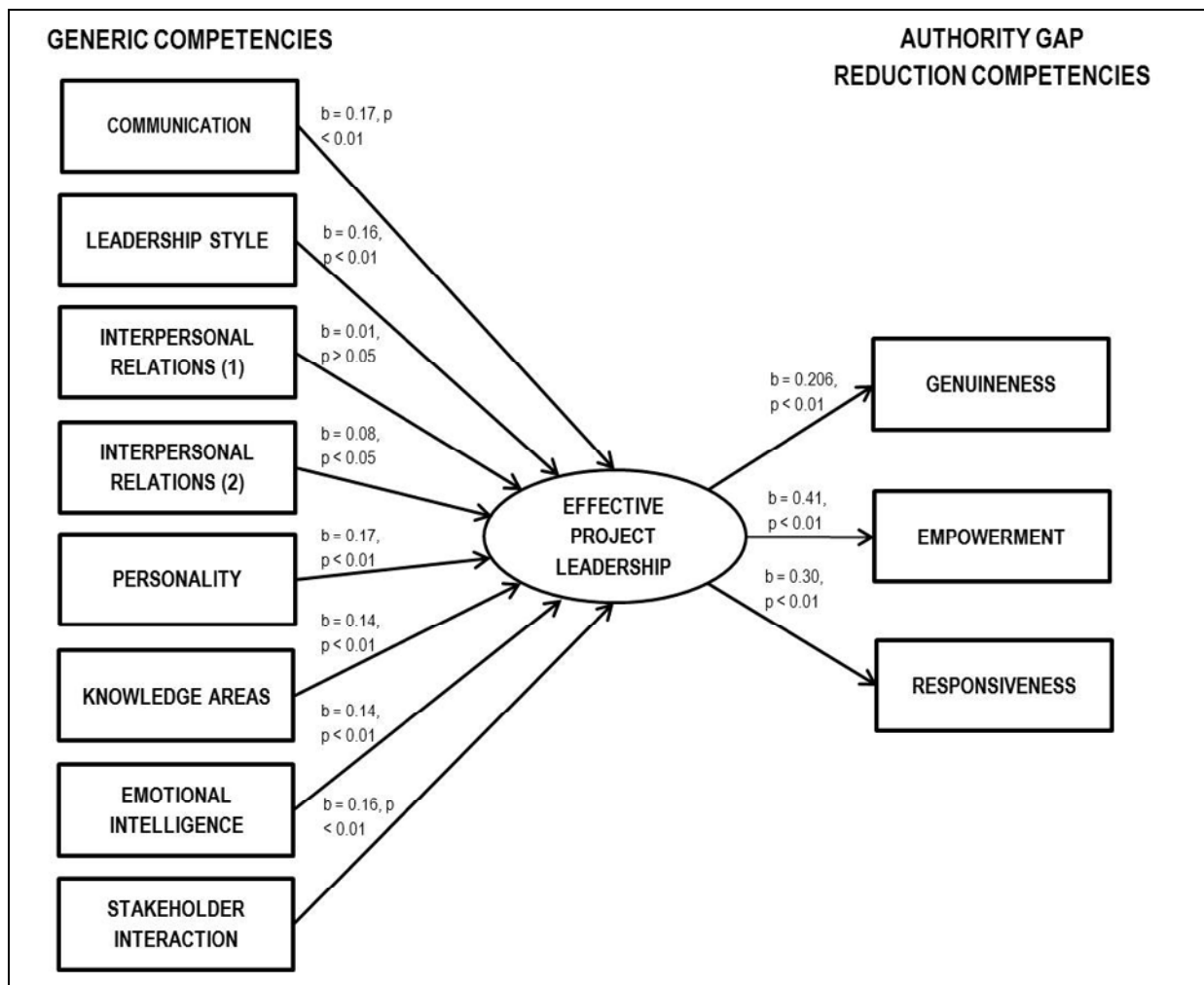
Table 7 reported a statistically significant positive relationship between effective project leadership and authority-gap reduction related to empowerment ( $p < 0.001$ ).  $H0^{10.2}$  is accepted.

**H010.3: There is a relationship between project leader effectiveness and authority-gap reduction related to responsiveness.**

Table 8 reported a statistically significant positive relationship between effective project leadership and authority-gap reduction related to responsiveness ( $p < 0.001$ ).  $H0^{10.3}$  is accepted.

In summary, the results showed positive linear relationships between communication, leadership styles, interpersonal relations relating to extroverts, personality, emotional intelligence and stakeholder interaction with the dependent variable (effective project leadership).

Regression analysis, also has assisted tremendously in understanding the linearity of the relationships between the effective project leadership and authority gap reduction competencies (genuineness, empowerment and responsiveness). Figure 1 presents a summary of the empirical results of the research and the managerial implications and conclusions.



**FIGURE 1: Effective project leadership**

Legend: NS = Not statistically significant; '+' = statistically significant.

Source: Researcher's own construction

## 12. IMPLICATIONS FOR FURTHER RESEARCH

There are other aspects of this research that need to be examined looked at closely, given that it is now clear that emotional intelligence, interpersonal relations, stakeholder interaction and the personality of the leader improve the prospects of successful execution. The implications are that strong emotionally intelligent project leaders with the necessary experience should be used to provide training for the prospective project leaders. Extensive research should be done and emphasis in classrooms and training sessions should be put on developing soft skills for effective project leadership.

This study has established the following facts that need to be used in the training and development of the future generation of project leaders:

- The knowledge areas do not feature as important critical core competencies as previously known.
- Interpersonal relations have a bi-pronged construct, showing extroversion as a better competency than introversion.
- Stakeholder management during execution is important: A full understanding of stakeholder interest and role may reduce unnecessary problems and failure.
- A person with high emotional intelligence will consciously create a good working environment, implying that effectiveness may depend on the age of the leader.
- Only two leadership styles were suggested, transactional and autocratic, which according to existing literature, are the leading style of men.
- Embracing managers and project team leaders' competencies can promote effective project leadership that reduce the authority gap successfully through development of management genuineness, responsiveness and empowerment.

## 13. LIMITATIONS OF THE RESEARCH

The legacy of apartheid lingers on in the racial profile of the industry. As a result, there is a racial imbalance which does not reflect the demographics of the South African population. There are generally more White and Coloured managers than African managers in project-based industries because more whites and coloured-people are interviewed. The results of this research, therefore, may not be used as a generalisation on the whole population of South Africa. However, the results speak to the project environment adequately.

The researcher was not personally involved and did not have control over the processes at the respondent level. Part-time Bachelor of Technology (Project Management) students

carried this out as a research-project. They conducted the interviews in their project-based industries. If diversity in management understanding together with the type of differences that may emanate from racial differences in the workplace, a stratified sampling method may have produced a more representative finding from the different managers from different backgrounds.

## 14. CONCLUSION

The projectification of organisational operations is on the increase. This necessitated the study of project leadership as the trend for the future. The findings have identified the type of soft skills to be focused on in the training of future project leaders. The study also established that interpersonal relations are critical, with extroversion being more important than introversion. Emotional intelligence has been highlighted as an important aspect of the whole process of effective management.

The assumption that is made, generally, is that the older one is, the more the experience and the higher the levels of emotional intelligence that one has. This creates room for further studies in both the value system and theories of implicit followership and leadership. In summary, it means that 'communication, leadership style, interpersonal relations related to extroverts, personality, emotional intelligence and stakeholder interaction are critical core competencies required for effective project leadership.

In the presence of authority gap, genuineness and responsiveness of management are the key elements of successful effective project management. The findings also create a scope for new debate on the effectiveness of transformational leadership as contrasted to transactional leadership.

## REFERENCES

- ALAM M, GALE A, BROWN M & KHAN AI. 2010.** The importance of human skills in project management professional development. *International Journal of Managing Projects in Business* 3(3):495-516.
- ALBRIGHT SC, WINSTON W & ZAPPE C. 2009.** Data analysis and decision making. 4<sup>th</sup> ed. Cincinnati, OH: South-Western.
- BACCARINI D, SALM G & LOVE PED. 2004.** Management of risks in information technology projects. *Industrial Management & Data Systems* 104(4):286-295.
- BAGRAIN J, CUNNINGHAM P, POTGIETER T & VIDGE C. 2007.** Organisational behaviour: a contemporary South African perspective. 2<sup>nd</sup> ed. Pretoria: Van Schaik.
- BARTLETT JE, KOTRLIK JW & HIGGINS CC. 2001.** Organisational Research: determining appropriate sample size in survey research. *Information Technology, Learning, and Performance Journal* 19(1):43-50. Spring.

- BROWN K & HYER N.** 2010. *Managing projects: a team-based approach*. Boston, OH: McGraw-Hill/Irwin.
- BURKE R.** 2007. *Introduction to project management: one small step for the project manager*. Evanston, IL: Burke.
- BURKE R.** 2010. *Fundamentals of project management*. Northwestern University, IL: Burke.
- BURKE R & BARRON S.** 2007. *Project management leadership: building creative teams*. Ringwood, NJ :Burke.
- CHAN A, SCOTT D & CHAN A.** 2004. Factors affecting the success of a construction project. *Journal of Construction and Engineering Management* 130(1):153-155.
- COOKE-DAVIES T.** 2002. The real success factors on projects. *International Journal of Project Management* 20:185- 190.
- DOOLEN TL, HACKER ME & VAN AKEN EM.** 2003. The impact of organisational context on work team effectiveness: a study of production team. *IEEE Transactions on Engineering Management* 50(3):285-296.
- GILLARD S.** 2009. Soft skills and technical expertise of effective project managers. *Information Science and Information Technology* (6):723-730.
- GRAY CF & LARSON EW.** 2008. *Project management*. 4<sup>th</sup> ed. Boston, OH: McGraw Hill.
- HELLRIEGEL D, SLOCUM JW, JACKSON SE, AMOS T, KLOPPER HB, LOUW L & OOSTHUIZEN T.** 2009. *Management*. 4<sup>th</sup> ed. Cape Town: Oxford University Press.
- HIMMERICH D.** 2007. The importance of considering personality type. *Leadership in Action* 26(6):17-20.
- JOSHI VD, CHEN YM & LIM JFY.** 2009. Public perceptions of the factors that constitute a good healthcare system. *Singapore Med Journal* 50(10):982-989.
- KARWOWSKI W.** 2010. *International encyclopedis of ergonomics and human factors*. Broken Sound Parkway, NW: Taylor & Francis.
- KNIPE A, VAN DER WALDT G, VAN NIEKERK D, BURGER D & NELL K.** 2008. *Project management for success*. Sandton: Heinemann.
- LARSON EW & GRAY CF.** 2011. *Project management: the managerial process*. 5<sup>th</sup> ed. New York, NY: McGraw Hill.
- MCSHANE SL & VON GLINOW MA.** 2009. *Organisational behaviour*. Boston, OH: McGraw-Hill.
- MÜLLER R & TURNER J.** 2006. Matching the project manager's style to the project type. Elsevier. *International Journal of Project Management* 25:21-32.
- NICHOLAS JM & STEYN H.** 2012. *Project management for engineering business and technology*. 4<sup>th</sup> ed. New York, NY: Routledge.
- ROBBINS SP.** 2005. *Organisational behavior*. Englewood Cliffs, NJ: Prentice-Hall.
- TATIKONDA MV & ROSENTHAL SR.** 2000. Successful execution of product development projects: balancing firmness and flexibility in the innovation process · *Journal of Operations Management* 18 (4) 401–425.
- TURNER JR & MÜLLER R.** 2004. Communication and co-operation on projects between the project owner as principal and the project manager as agent. *European Management Journal* 22:327-336.
- WELMAN C, KRUGER F & MITCHELL B.** 2008. *Research methodology*. Cape Town: Oxford University Press.
- ZIKMUND WG & BABIN B J.** 2007. *Exploring marketing research*. Sydney, AU: Thompson Southwestern.