

NECESSARY COMPETENCIES OF CONSTRUCTION MANAGERS IN A
DEVELOPING COUNTRY

PEJMAN GHASEMI POOR SABET

A project report submitted in partial fulfillment of the
requirements for the award of the degree of
Master of Science (Construction Management)

Faculty of Civil Engineering
Universiti Teknologi Malaysia

JUNE 2013

ABSTRACT

One of the most significant obstacles in a developing country is related to non-productive investments or delay on productivity of construction projects. Following the development in the business world, the challenges for handling the businesses toward productivity raised as well. Construction industry plays an important role in the foundation of economy everywhere. Therefore, to undertake and push the projects through the challenges to achieve the productivity and the business advantages, a proper leadership by a competent Construction Manager (CM) is essential. Necessary competencies as the first objective, the importance of the competencies as the second objective, and finally prediction of a competent manager leading to a successful construction project based on CM's "Big Five Traits" as a psychological factor through the dominant challenges at working environment is as the last objective. In order to gather data, both quantitative and qualitative surveys were employed in the study. Interview, Delphi method, and questionnaires analysis have been utilised to fulfil the three objectives respectively. By the results of the survey, the projects' authorities can recognize the essential competencies, the level of competency, and finally a predictor for prominent construction managers based on CM's Big Five traits as a psychological factor before employment.

Keywords: Necessary competencies, CM's Big Five Traits, competent construction manager

ABSTRAK

Salah satu halangan yang paling utama dalam sesebuah negara yang sedang membangun adalah berkaitan dengan pelaburan yang tidak produktif atau kelewatan produktiviti projek pembinaan. Disebabkan oleh perkembangan dalam dunia perniagaan, cabaran untuk mengendalikan perniagaan ke arah produktiviti turut dibangkitkan. Industri pembinaan memainkan peranan yang penting di dalam setiap asas ekonomi. Oleh itu, untuk menjalankan serta membawa projek- projek dalam menghadapi cabaran dalam mencapai produktiviti dan kelebihan perniagaan, adalah penting untuk mempunyai kepimpinan yang betul atau pengurus yang berwibawa. Kecekapan adalah perlu di mana ianya merupakan objektif pertama, kepentingan kecekapan dinyatakan sebagai objektif kedua, dan yang terakhir adalah meramal pengurus berwibawa dalam mengetuai projek pembinaan yang Berjaya berdasarkan CM's "Big Five Trait" sebagai faktor psikologi melalui cabaran yang dominan di dalam persekitaran kerja. Dalam usaha mengumpul data, kedua-dua kajian kuantitatif dan kualitatif telah dijalankan dalam kajian ini. Temuduga kaedah Delphi dan analisis soal selidik telah digunakan untuk menyokong ketiga-tiga objektif tersebut. Dari hasil kajian ini, pihak berkuasa dalam sesebuah projek boleh mengiktiraf kepentingan kecekapan, tahap kecekapan dan meramal untuk pengurus pembinaan terkemuka, CM berdasarkan "Big Five Traits" sebagai faktor psikologi sebelum mendapat pekerjaan.

Kata Kunci: Kecekapan Wajib, CM's "Big Five Traits", pengurus pembinaan yang cekap

TABLE OF CONTENTS

CHAPTER	TITLE	PAGES
	ACKNOWLEDGEMENT	iv
	ABSTRACT	v
	ABSTRAK	vi
	TABLE OF CONTENTS	vii
	LIST OF TABLES	xii
	LIST OF FIGURES	xiiiv
	LIST OF APPENDICES	xivi
1	INTRODUCTION	1
	1.1 Background	1
	1.1.1 The Concept of Competence	2
	1.2 Statement of the Problem	4
	1.3 Research Questions	5
	1.4 Aim and Objectives of the Research	5
	1.5 Significance of the Study	6
	1.6 Scope	7
	1.7 OperationalDefinitions	7
	1.8 Brief Framework of the Research Methodology	10

2	LITERATURE REVIEW	12
2.1	Introduction	12
2.1.1	Definitions of Competency	13
2.2	The Competency Approaches	14
2.2.1	Approaches on the Comprehension of Competencies	16
2.2.1.1	Behavioral Approach	17
2.2.1.2	The Functional or Standard Approach	19
2.2.1.3	The Situational Approach	22
2.2.2	Competency Categories	23
2.2.2.1	Individual competencies	23
2.2.2.2	Social and communication competencies	24
2.2.2.3	Management and Leadership Competencies	25
2.2.2.4	Strategic Competencies (Methodological Competency)	25
2.2.2.5	Complementary Competencies	26
2.2.3	Selection of Competent Individuals	27
2.3	Personality and Personnel Selection	29
2.3.1	Big Five Personality Traits	32
2.4	Research Framework	38
2.5	Conclusion	40
3	METHODOLOGY	41
3.1	Introduction	41
3.1.1	Sequential Mixed Method	41
3.2	The Process of Investigation	41
3.2.1	Interview and the Processes of Delphi	45

3.2.1.1	Panel Selection for Interview and Delphi Study	47
3.2.1.2	Gathering data from Interview	48
3.2.1.3	Delphi Study	49
3.2.1.4	The Level of Competency	50
3.2.2	Big Five Personality Test	51
3.2.3	Tools for Analysis	52
3.2.3.1	Kendall's Coefficient of Concordance	52
3.2.3.2	Correlation Analysis	53
3.2.3.3	Multiple Linear Regressions	54
3.3	Validity Tests	54
3.3.1	Validity of Big Five Personality Traits Test	55
3.3.2	Reliability	56
3.4	Conclusion	56
4	DATA COLLECTION, RESULTS, ANALYSIS ,AND DISCUSSION	57
4.1	Introduction	58
4.2	Interviewees' Background	58
4.3	RQ1: Which competencies are necessary for a CM in construction projects in a developing country?	60
4.3.1	Qualitative Data Analysis	60
4.3.1.1	Individual Competencies	61
4.3.1.2	Communication and Social Competencies	69
4.3.1.3	Management and Leadership Competencies	73
4.3.1.4	Strategic Competencies	74
4.3.1.5	Complementary Competencies	77

4.4	RQ2: What are the priorities for the essential competencies of a CM in a developing country?	80
4.4.1	Delphi Study to Find the Competencies' Ranks	81
4.5	RQ3: Is there any relation between essential competencies and "Big Five Traits" of a CM in a developing country?	84
4.5.1	Relationship between Personality Traits and CM Competency Level	89
4.6	Chapter Summary	90
5	CONCLUSIONS AND RECOMMENDATIONS	91
5.1	Introduction	91
5.2	Recapitulation of the Study	91
5.3	Requiring Competencies in a Developing Country	92
5.3.1	Individual Competencies	94
5.3.2	Communication and Social Competencies	94
5.3.3	Management and Leadership Competencies	95
5.3.4	Strategic Competencies	95
5.3.5	Complimentary Competencies	96
5.4	Priority of the Competencies	96
5.5	The correlation between Personality Traits (Big Five) and the Level of CMs' Competencies in Construction Projects	97
5.5.1	Developing an Equation based on Competency Model and Big Five Personality Traits	98
5.6	Recommendations	99
	REFERENCES	101
	APPENDICES	104
A	The null hypothesis	107
B	Interview protocol	109

C	The Questionnaire of Delphi (Round One)	113
D	The Questionnaire of Delphi (Round Two)	115
E	Self Assessment Questionnaire	117
F	Competency Assessment Questionnaire	121

LIST OF TABLES

TABLE NO.	TITLE	PAGE
2.1	Chronology on the Purposes of Applying Competency	15
2.2	Schroeder's High performance Competencies	18
2.3	Spencer and Spencer's Generic Prioritization (Spencer&Spencer, 1993)	18
2.4	MCI's Personal Competence Model (Tate, 1995)	21
2.5	A Summary of Competencies related to the Situational Approach	22
3.1	Research Questions and Research Hypothesis	44
3.2	Answering Key Of Big Five personality Test	51
4.1	Background of Interviewees and Delphi Respondents	59
4.2	Individual Competencies	68
4.3	Communication and Social Competencies	72
4.4	Management and Leadership Competencies	74
4.5	Strategic Competencies	76
4.6	Complimentary Competencies	77
4.7	Necessary Competencies of a CM in a Developing Country based on the Frequency	79
4.8	Round 1 Delphi Study Results	82
4.9	Summary of Competencies based on importance	83
4.10	Pearson Correlation between competency level and Big Five Personality traits	88
4.11	Variables Entered/Removed ^a	89
4.12	The Coefficient Obtained from Regression Analysis	89

5.1	Necessary Competencies of a CM in a Developing Country based on the Frequency	93
5.2	Summary of Competencies based on Importance	96

LIST OF FIGURES

FIGURE NO.	TITLE	PAGE
1.1	Research Process Flowcharts	11
2.1	Competency Categories	27
2.2	The Relation between Personality and Behavior	30
2.3	Big Five Personality's Factors	35
2.4	Initial Model of the Research	39
2.5	Big Five Traits as Independent Variables	40
3.1	General Feature of Sequential Mixed Method	40
3.2	General Feature of Designing Dnterview Questions	46
3.3	General Feature of Employing Delphi Method	47
4.1	Frequency of Interviewees by Individual Competencies	68
4.2	Frequency of Interviewees by Communication and Social Competencies	72
4.3	Frequency of Interviewees by Management and Leadership Competencies	74
4.4	Frequency of Interviewees by Strategic Competencies	76
4.5	Frequency of Interviewees by Complementary	78
4.6	Correlations between Extraversion and Competency Level	85
4.7	Correlations between Conscientiousness and Competency Level	85
4.8	Lack of Correlation between Neuroticism and Competency Level	86
4.9	Correlations between Agreeableness and Competency Level	86
4.10	Correlations between Openness and Competency Level	87

LIST OF APPENDICES

APPENDIX	TITLE	PAGE
A	The Null Hypothesis	104
B	Interview Protocol	105
C	The Questionnaire of Delphi (Round One)	108
D	The Questionnaire of Delphi (Round One)	110
E	Self-Assessment Questionnaire	112
F	Competency Assessment Questionnaire	116

CHAPTER 1

INTRODUCTION

1.1 Background

Professionalism can be defined as attributes and behaviours of a person or persons employed in profession that the others can trust him or her to do its activities in a correct way (Farndale, 2005). In order to raise the level of professionalism, associations usually are formed with common goals, including employment standards and Codes of ethics, sustainable development of the members' capabilities, identification of interacting areas and enhancing legal and social status in the community will be considered. In this regard, numbers of international experts in construction industry believe that professionalism is one of the major facing challenges to increase its effectiveness continuously (Boselie & Paauwe, 2005). Development of standard for competencies is one of the proposed actions in order to develop professionalism in management (Brockbank & Ulrich, 2001). The necessary standards usually are created for licensing and certification based on the competencies required for the occupations. There exists another factor in professions noticed that how a competent person can be recognized before entering the profession (US Project Manager Competency Development Framework, 2001).

1.1.1 The Concept of Competency

In the past, experts have suggested various components of competency. Maykl Lucy defined the competency by formula as follows (Losey, 1999):

$$\text{Intelligence} + \text{training} + \text{experience} + \text{Ethics} + \text{Favourites} = \text{Competency}$$

In Lucy's view, intelligence is not an acquirable but is the hereditary factor in this equation. It also is considered as the intellectual capacity of every human in learning, analysis of information to convert the raw data into information needed to solve problems. Training is another factor that plays a role in competency combination. The purpose of education is not just a college degree, but is a process that occurs continually and is based on different ways of learning. Following the rapid scientific development in the modern world, construction industry should constantly acquire new achievements in different specializations in order to maintain and to develop professional competencies. To keep the experts in touch with the progress and support those to participate in training regularly on this issue can be considered to promote the industry. Experience is the next factors that can be the greatest teacher in life. Managers and experts should not only rely on their own experience but they must exploit the experiences of the others.

The successful progress of a project can be on the duty of a project manager related to the main requirements considered in design such as quality, schedule, cost, and safety. Therefore, the role of construction manager is as the most significant factors on the economic foundation of countries due to the huge investment on construction project. At the early of 1990s, falling of construction demands caused severe competition leading to unexpected progress in the industry (Edum-Fotwe and

McCaffer, 2000). The contractors had to accept more serious duties on their contract by the methods such as 'design and build'. The new demand affected the traditional method by concentrating on productivity, performance, and quality the appearance of the method compared to the traditional methods caused the emergence of a competitive tendency to obtain the tenders.

Following the changes in the industry, project managers have to combine their roles with the aspects of technical, engineering, accuracy, reliability of quality and cost performance that some of them had not been included in their roles previously.

The talent of obtaining the highest quality and quantity of work progress with the least expenses is one of the most highlighted targets of a construction manager. In fact, awareness of the value of time and manpower, materials, and machineries are the basic necessities for a construction manager to push the projects. A CM must always seek the appropriate method and principle for organizing and carrying out the jobs on the best way to achieve the better benefits for the projects. For this purpose, there must be a manager with different specialization and significant characteristics.

Nowadays, given construction complexities and increasing fast productivity demands cause a construction management system to be had to compatible with progress of technology and specialized tools to achieve such goals. Awareness about how the project must be conducted and what method is suitable or how to do a job, need perfect plans and different knowledge especially with the complex management of construction projects associated with labour organizations with regard to labour laws and civil engineering machinery and increasing workshop costs. Today, managing project affairs have been emerged as a technology and science. Meaning that, just worker discipline cannot meet the solutions for the problems which are being faced in the construction sites.

To launch a construction project, the following five basic principles were offered by technical experts: 1- Responsibility Management 2- Raw Material Management 3-Human resources Management 4- Financial Management 5-Machines Management. Mentioned items are known as five M of workshop management in expression. The project manager has to pay necessary attention to them in order to plan and manage a project. Certainly this view requires the appropriate competency model of CM in the industry. Therefore, to identify the competencies and their prioritization are the most significant step towards employing a construction manager who are competent to achieve organizational goals. Also, to identify some variables related to outweigh the competencies can conduct evaluation of a construction manager.

1.2 Statement of the Problem

A developing country contains many construction projects everywhere in different sizes. As an example Pars Jonoobi (south Pars) in Asalooeyeh Port in Iran is the first gas area in Iran and the second in the world with many crucial projects. As far, there are many important construction projects in the country; the role of a construction manager is one of the significant factors to push the projects towards productivity. Issue of untimely completion of a project can mean not to return investment and following that appearance of inflation in economy. It has been as a problem which countries have faced. A developing country has not benefited in the area of manufacturing industry scientifically and technologically rather than developed countries.

The role of leaders has been seen as a precipitator toward the goals of the project. The most significant goals of a construction manager are timely completion, quality and cost control. Thus, personality and specialization characteristics of a project manager play the essential role to achieve such objectives (Mescon; Albert&Khedori, 1985). In other words, the lack of competencies pattern to predict a

successful construction manager can cause deviation in a conducting project correctly. Thus, the employers may find later that their assessment of the construction manager employed would not be extracted during construction such as the way they expected. Therefore, recognition of competencies coming along their priorities and a predictor of competency level can lead to hire a suitable construction manager. Therefore, the following questions are defined as the research questions in this study.

1.3 Research Questions

The following questions have been established and conducted in order to find solutions related to statement of the problems:

1. What are the necessary competencies of a CM in a developing country?
2. What are the priorities for the essential competencies of a CM in a developing country?
3. What equation could be developed based on competency level and Big Five traits of a CM?

1.4 Aim and Objectives of the Research

To determine the essential skills, knowledge, and the characters for a construction manager in order to run a construction project smoothly towards a timely and proper productivity at construction industry and to evaluate the relation between competency level and Big Five traits are the aim of the research. Thus, the following objectives could be stated:

1. To identify the necessary competencies of construction managers in a developing country.
2. To prioritize the essential competencies of a construction managers in a developing country.
3. To evaluate the relation between the level of the essential competencies and Big Five traits of a CM in a developing country.

1.5 Significance of the Study

Some investigations have been done about the managers and their skills and abilities on different fields such as Human Resource, Education and so on around the world, but none had not been concentrated on construction management enough, clearly, and directly in a developing country encountering many challenges. Among the fields, Construction projects as one of the most important economic sections play significant role in economy cycle of a country. They could cause failure of returning capital absorbed during progress and following that inflation in society if there is no appropriate conduction and leading beside the other factors such as outside cooperation and supports. Given the complexity of the projects, today the role of CM on technical guides and controlling the progress of a project became a very useful and significant tool to save such huge investments. Therefore, the need of scientific, technical competencies, skills and personality traits to push the project made a construction manager's role very sensible. In other words, the presence of a suitable conductor can prevent suspension or prolongation of the construction projects which are serious problems in construction industry. This research can be reliable to solve such problems related to leading a construction project.

1.6 Scope

This research focuses on the competencies and characteristics required for a CM on construction projects in a developing country. In this research, for the first objective, interview is employed and for the second objective, Delphi method is used to collect data and classify them. In order to answer the other questions (3&4) the questionnaires is applied to gather data. The participants in this study are experienced experts, managers and supervisors in construction projects.

1.7 Operational Definitions

The researcher has utilized various terms to refer the materials. To clarify the terms and make them recognizable, the terms are defined as follows:

Construction manager (CM): The term of construction manager is used to refer to an individual whose duty is to control and carry out different phases and aspects of a project from the very start point in preliminary steps until it is completed. In order to achieve this goal he has to do several crucial tasks. For instance, he has to plan, schedule, monitor, and control the project. Barry and Fryer (1996) believed that the most important aspect of a manager's duty is optimal use of time, control the expenses and finish the project with as good quality as possible.

Competencies: According to Brockbank and Ulrich (2008) competencies is defined as a combination of necessities including expertise, performance or treatment, information and capabilities which are necessary for an individual to implement a plan.

Management and leadership competencies: It is utilized to refer to identifying opportunities, preparing appropriate plans and programs, systematizing the complex, and monitoring the performances, that are some features of managers, to make them more beneficial, advantageous and favourable through competition and success (Schoonover, 2000; Brockbank, Ulrich, 2008).

Personality: Personality (individuality) is defined as thoughts, characteristics, and manners which have roles in an individual's capability to control and precede a project.

Individual competencies: Individual competencies include individuals' capabilities and proficiency to manage them besides the capability to be imaginative and inventive to find the best solutions for problems and make the most useful choices (Tipplet and Amros, 2003).

Strategic competencies: Strategic competencies refers to the capabilities and proficiency needed to recognize the occasions that exist outside and also the potencies and shortcomings existing in a system to be harmonized so that the formula can be executed, and the cross-functional decisions can be assessed so as to accomplish the objectives of the organization (Harrison and John, 2010).

Communication: Communication refers to the strategies and the procedures to exchange convey and share out information and opinions and approaches. The strategies consist of behaviour, writing, signal, and speech.

Methodology: A methodology is usually defined as a system that guides one how to find a solution for a problem through special constituents and elements like phases, tasks, strategies, approaches and instruments.

Complement: Something which makes something else complete, total and perfect.

Social and communication competencies: The capability and proficiency which help a person generate influential relationships and get in touch and communicate with other people (Tipton and Amros, 2003).

Personality traits: The ordinary pattern of feelings, notion, and manner which cause an individual's personality and identity to be particular and distinct (Goldberg, 1993; McCrae & John, 1992).

"Big Five" factors of personality: This term is defined as five extensive areas of aspects of personality which are utilized for determining the characteristics of mankind. The theory proposed according to Big Five factors is named the *Five Factor Model (FFM)*.

Costa and McCrae (1992) proposed the structure of personality traits as an influential powerful model for recognizing the relationship between characteristic and different academic performances. The Big Five factors consist of:

1. Openness (creative / inquisitive vs. steady and careful)
2. Consciousness (competent/prearranged vs. unconcerned/not careful)
3. Extraversion (sociable/active vs. lonely/inactive)
4. Agreeableness (gracious/compatibility vs. bitter/heartless)
5. Neuroticism (apprehensive /anxious vs. safe/self-assured)

Openness: This kind of people like art, odd opinions, exiting activities, feelings, different kinds of experiences and imagination and inquisitiveness (Goldberg, 1993; McCrae).

Conscientiousness: those who enjoy a high level of consciousness in their characteristic are likely to be very well-behaved, self-regulated and intend to accomplish their goals (Gosling, 2008; Goldberg, 1993; McCrae and John, 1992).

Extroversion: An extravert person likes groups, is self-assured and seems optimistic in others' eyes. A person of this type is apt to search for simulation and collaboration with other people (Jung, 1921; Roesch and wee, 2006).

Agreeableness: Agreeable people like to be friendly, likable, empathetic, helpful, and supportive instead of being doubtful and challenger to other people in the society (Gosling, 2008; Costa and McCrae, 1992).

Neuroticism: In psychology, it is a basic feature of personality that appears by stress, unstable mood, being anxious, enviousness and jealousy. Those who are neurotic might not be able to manage their strong wishes and cannot postpone pleasure or satisfaction. Highly neurotic people have less stable feelings and show more reactions to anxiety (Tompson, 2008). To be anxious also can be useful in some situation.

1.8 Brief Framework of the Research Methodology

The first step to conduct this study was to recognize the competencies that are necessary for CM managers. Then their competency levels were estimated.

Meanwhile, in the same step, the factors that influence the competencies were identified. (Refer to Figure 1.1 for more information)

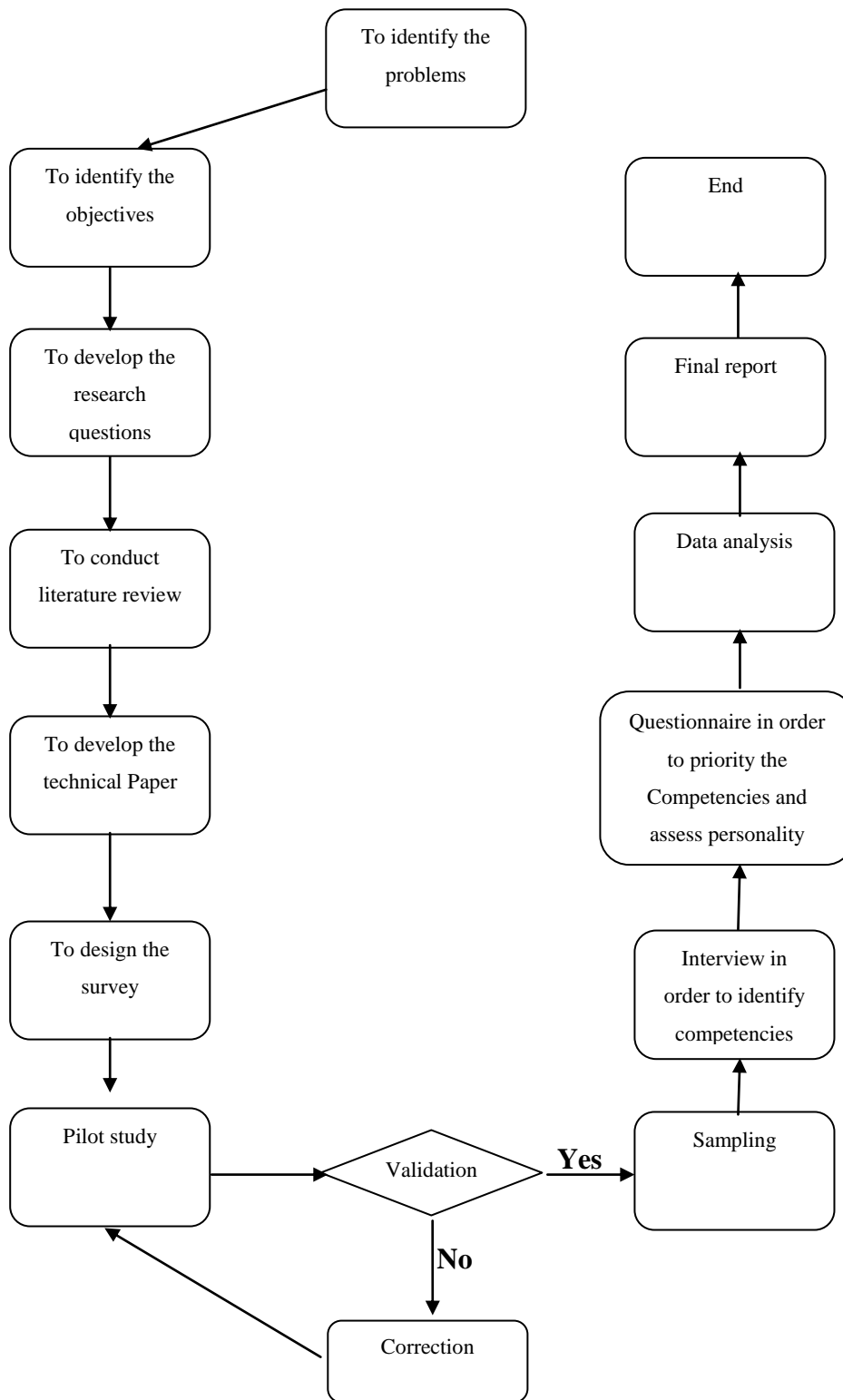


Figure 1.1: Research Process Flowcharts

REFERENCES

- Andranovich, G. (1995). *Developing community participation and consensus: the Delphi technique. Partnerships in education and research*. USA: California State University WREP 131. Department of Political Science.
- Argyrous G. (2011). *Statistics for Research: with a guide to SPSS*. USA: SAGE.
- Bateman T. S. and Snell, S. A. (2010). *Management: Leading & Collaborating in a Competitive World, ninth edition*. USA: McGraw.Hill.
- Brown, D. (2011). *Career Information, Career Counseling and Career Development*. (10th ed.) . New York: AllynAnd Bacon.
- Carney, J.H., J.F. Joiner, and H. Tragou(1997), *Categorizing, coding and manipulating qualitative data using the wordperfect word processor*. The Qualitative Report, 1997. **3**(1): p. 1-8.
- Cattell, R.B. (1943).The measurement of adult intelligence.*Psychological Bulletin*.40, 153- 193.
- Cheetham, G. and G. Chivers,(2005)*Professions, competence and informal learning*. 2005:Edward Elgar Publishing.
- Cockerill, T., J. Hunt, and H. Schroder(1995), Managerial competencies: fact or fiction?.*Business Strategy Review*. **6**(3): p. 1-12.
- Cook, M. (2009). *Personnel selection Adding value Through People*. (5th. Ed.). Willy- Blackwell
- Costa, P. T., Herbst, J. H., McCrae, R. R., and Siegler, I. C. (2000). Personality at midlife: Stability, intrinsic maturation, and response to life events. *Assessment*. **7**, 365–378.
- Custer, R. L., Scarcella, J. A. and Stewart, B. R. (1999).The modified Delphi technique – A rotational modification.*Journal of Vocational and Technical Education*.15(2) (Electronic version).

- DeNeve, K. M., and H. Cooper. (1998). The happy personality: A meta-analysis of 137 personality traits and subjective well-being. *Psychological Bulletin*. 95: 542–75.
- Roberts-Davis, M. and S. Read (2001), Clinical role clarification: using the Delphi method to establish similarities and differences between nurse practitioners and clinical nurse specialists. *Journal of Clinical Nursing*. **10**(1): p. 33-43.
- Dessler G. (2010). *Human resource management*. (12thed.). Prentice Hall.
- Dewitt, S. and Schouwenburg, H. C. (2002). Procrastination, temptations, and incentives: The struggle between the present and the future in procrastinators and the punctual. *European Journal of Personality*.16 (6), 469-489.
- Digman, J. M. (1990). Personality structure: Emergence of the five-factor model. *Annual Review of Psychology*, 41, 417–440.
- Dodge, Y. (2003). *The Oxford Dictionary of Statistical Terms*, UK: OUP.
- Driscoll, D. L., Appiah, Y. A., Philip, S., and Douglas, J. R. (2007). Merging Qualitative and Quantitative Data in Mixed Methods Research: How To and Why Not. *Ecological and Environmental Anthropology*.3(1), 19- 28.
- Drummond, R.J. (2010). *Assessment procedures for counselors and helping professionals*.(7thed.). Columbus, OH: Merrill.
- Everes, A., Anderson, N., Voskuijl, (2005). *Handbook of Personnel selection*. United Kingdom: Blackwell.
- Funder, D. C. (2001). *Personality*. *Annual Review of Psychology*, 52, 197-221.
- Furnham, A. (1990). Can people accurately estimate their own personality test scores? *European Journal of Personality*. (4), 319–327.
- Garavan, T. N., & McGuire, D. (2001). Competencies and workplace learning: Some reflections on the rhetoric and the reality. *Journal of Workplace Learning*, 13, 144-163.
- Gazzangiga, M. F. (2008). *Human: The Science Behind What Makes Us Unique*. HarperCollins Publishers.
- Giluk, T.L.(2009).Mindfulness, Big Five personality, and affect: A meta-analysis. *Personality and Individual Differences*. **47**(8): p. 805-811.
- Goldberg, L. R. (1993). The structure of phenotypic personality traits. *American Psychologist*, 48, 26-34.
- Goleman, D. (2002). *Primal Leadership: Realizing the power of emotional intelligence*. Boston: Harvard Business School Press.

- Gosling, S. (2008). *Snoop: What your stuff says about you*. New York: Basic Books.
- Harrison, J. S. and C.H.S. John. (2010). *Foundation in Strategic Management*. USA: South-Western.
- Hettema, J. M., Neale, M. C., Myers, J. M., Prescott, C. A., and Kendler, K. S. (2006). A population-based twin study of the relationship between neuroticism and internalizing disorders. *American journal of Psychiatry*. 163, 857-864.
- Holland, J.L. (1996). Exploring careers with a typology: What we have learned and some new directions. *American Psychologist* 51(4), 397–406.
- Hsu, C.-C. and B.A. Sandford(2007). The Delphi technique: making sense of consensus. *Practical Assessment, Research & Evaluation*. 12(10): p. 1-8.
- Huczynski and Buchanan (2010), *Organizational Behavior :An Introductory Text*. (7thed.). Harlow: Prentice Hall.
- Ishibashi, Y. and Kottke, J. (2009), Confucianism, Personality Traits, and Effective Leaders in Japan and the United States, *Annual Conference of the Association for Psychological Science*. San Francisco, California
- Jakobwitz, S., and Egan, V. (2006). The dark triad and normal personality traits. *Personality and Individual Differences*. 40, 331-339.
- Johnson, E. K. (2000). The practice of human resource management in New Zealand: strategic and best practice? , *Asian Pacific Journal of human resource*, 38(2), 69-83.
- Judge, T.A., D. Heller, and M.K. Mount(2002), Five-factor model of personality and job satisfaction: a meta-analysis. *Journal of applied psychology*. 87(3): p. 530.
- Judge, T.A., C.A. Higgins, C.J. Thoresen, and M.R. Barrick.(1999). The Big Five personality traits, general mental ability, and career success across the life span. *Personnel Psychology*. 52(3), 621–52.
- Judge, T. A., Bono, J. E., Ilies, R., & Gerhardt, M. W. (2002). Personality and leadership: A qualitative and quantitative review. *Journal of Applied Psychology*. 87(4), 765–780.
- Karimi, A. (2008), *The Competencies Of Managers In Educational System*. Iran: Omid Publication.
- Keller, G., (2009), *Statistics for Management and Economic, eighth edition* ,South-Western, Canada.

- Kessler R. (2008). *Competency-Based Performance Reviews*. USA: Career Press Publications
- Kormanik, M. B., & Ruona, W. E. A. (2007). *In search of the "pracademic": Building a general competencies model for being a scholar-practitioner*. Paper presented at the annual meeting of the Academy of Human Resource Development, Indianapolis, IN.
- Kreitner, R. and Kinicki, A. (2010). *Organizational Behavior*. USA: McGraw-Hill.
- Kuncel, N. R., Hezlett, S. A., & Ones, D. S. (2001). A comprehensive meta-analysis of the predictive validity of the Graduate Record Examinations: Implications for graduate student selection and performance. *Psychological Bulletin*, 127, 162–181.
- Levy-Leboyer, C. (1994). *Selection and Assessment in Europe*. In H. C. Triandis, M.D. Dunnette and L. M. Hough (Ed.). *Handbook of industrial and organizational psychology* (Vol. 4, pp. 173-190). Palo Alto, CA: Consulting psychologists press.
- Liao, C. S. Lee, C.W. (2009). An Empirical Study of Employee Job Involvement and Personality Traits: The Case of Taiwan, *Int. Journal of Economics and Management* 3(1): 22 – 36.
- Lounsbury, L.W. Gibson and F.L. Hamrick. (2004). The development of a personological measure of work drive. *Journal of Business and Psychology*. 18(4), 347–71.
- Loveland James M., Gibson ,Lucy W.,LounsburyJohn W. , Huffstetler Beverly C. (2005). Broad and Narrow Personality Traits in Relation to the Job Performance of Camp Counselors. *Child & Youth Care Forum*. 34(3), 241-255.
- Ludwig, B. G. (1996). U.S. Extension systems – Facing the challenge to internationalize. *Journal of Extension* (Electronic Version). 34 (2). Retrieved from <http://www.joe.org/joe/1996april/rb3.html> on July, 13, 2010.
- Madu, B. C. (2009). *An Examination of The Competencies Required in the Transformation of the Human Resources Professionals to an Executive Management Strategic Partner in the 21st Century*, Doctor of Philosophy, Capella University.
- Matthews G. and Deary, Ian J. (1998). *Personality traits*. Cambridge, UK: Cambridge University Press.

- McCrae and J. Allik. (2002). *The five-factor model of personality across cultures*. New York: Kluwer Academic/Plenum Publishers.
- Mount M. K., Barrick M. R. and Stewart G. L. (1998). "Five-factor model of personality and Performance in jobs involving interpersonal interactions". *Human Performance* **11**: 145–165
- Nel P. S., Werner A., Haasbroek G. D. , Poisat P., Sono T., Schultz H. B. (2008), *Human resource management*. Oxford, Southern Africa
- Petter, S., D. Straub, and A. Rai, Specifying formative constructs in information systems research. *Mis Quarterly*. **31**(4): p. 623-656.
- Picazo-Vela, S., et al.(2010).Why provide an online review? An extended theory of planned behavior and the role of Big-Five personality traits.*Computers in Human Behavior*. **26**(4): p. 685-696.
- Rasli, A. (2006), *Data analysis and interpretation: a handbook for postgraduate social scientists*, UTM university Malaysia.
- Roesch, S. C. and Wee, C. (2006). Relations between the big five personality traits and dispositional coping in Korean Americans: Acculturation as a moderating factor, *International Journal of Psychology*. 41, 85-96.
- Russel, Bonnie L. (1995), *How to hire the right person*, Simon & Schuster, Australia
- Russell, M. & Karol, D. (1994). *16PF Fifth Edition. Administrator manual* (2nd ed.) Institute for Personality and Ability Testing, Inc.
- Salgado, J. (2002). The Big Five personality dimensions and counterproductive behaviors. *International Journal of Selection and Assessment*. 10, 117–125.
- Santos, J.R.A.(1999).Cronbach's alpha: A tool for assessing the reliability of scales. *Journal of extension*. **37**(2): p. 1-5.
- Spicer C. (2009).Building a Competency Model Screening job candidates for desired competencies pays off in higher sales and lower turnover, *HR Magazine*, Vol. 54, No. 4, pp. 1-3
- Tashakkori and Teddlie's (2010). *Handbook of mixed methods in the social and behavioral research*) Thousand Oaks: Sage.
- Tett, R. P., Jackson, D. N., & Rothstein, M. (1991). Personality measures as predictors of job performance. A meta-analytic review. *Personnel Psychology*, 44, 703–742.

- Thompson, E.R. (2008). Development and validation of an international English big-five mini-markers, *Personality and Individual Differences*. 45(6): 542 – 548
- Tipplet, R. and Amros,A. (2003), Competency- based training, Germany, Invent
- Turoff M, Linstone HA. (2008). The Delphi method: techniques and applications. [cited 2008 Oct 19]. Available from: <http://is.njit.edu/pubs/delphibook/>
- Ulrich, D., Brockbank, W., Yeung, A., & Lake, D. (1995). Human resources competencies: An empirical assessment. *Human Resources Management*, 34, 473–495.
- Ulrich, D., Brockbank,W., Johnson, D., Sandholtz, K. and Younger, J. (2008). *HR Competencies: Mastery at the Intersection of People and Business*. Alexandria,VA: Society for Human Resource Management.
- Wellman, G. L. (2003). *A Delphi expert assessment of proactive contracting in an evolutionary acquisition environment*. Unpublished Master Thesis, Air Force Institute of Technology. Wright-Patterson Air Force Base, Ohio.
- Wille, B., F. De Fruyt, and M. Feys(2010). Vocational interests and Big Five traits as predictors of job instability. *Journal of Vocational Behavior*. 76(3): p. 547-558.
- Zingheim P. K.and SchusterJ. R. (2009) Competency replacing jobs as the Compensation/HR foundation, *World at Work Journal*, 18 (3): 6-20.