LEADERSHIP CHARACTERITICS WITH CONSTRUCTION CHALLENGES

Author:
Nur Ain Ngah Nasaruddin[1], Ismail Abdul Rahman[2]

Email:
ismailar@uthm.edu.my[2]

Abstract: Construction industry is one of the most important sectors in supporting economy growth and development of a country. However the industry is also facing many issues that leads to construction project failure. It could be attributed from mishandling of challenges that emerged along the construction processes. These challenges issues are related to resources allocation, time, cost, quality, safety, project complexity, changes, uncertainties and also communication. It requires several approaches to handle these challenges effectively. There are many cases of projects failure due to poor leadership in handling construction challenges. Hence, this research book focus on leadership characteristics needed for Malaysia construction industry. The book has successfully uncovered significant leadership characteristics in facing the construction challenges. This book consisted of 4 chapters where the first chapter is regarding the leadership issues engulfing construction industry. While, the second chapter is about challenges that faced by construction practitioners in the project implementation and identifying the significant leadership characteristics which are need to handle the challenges. The third chapter is on developing structural model which relate the leadership characteristics with the construction challenges. Finally the last chapter is on model's verification and its application. This book is useful to researchers to explore leadership issues in construction industry and also for construction practitioners in evaluating their organizational leadership in handling challenges.

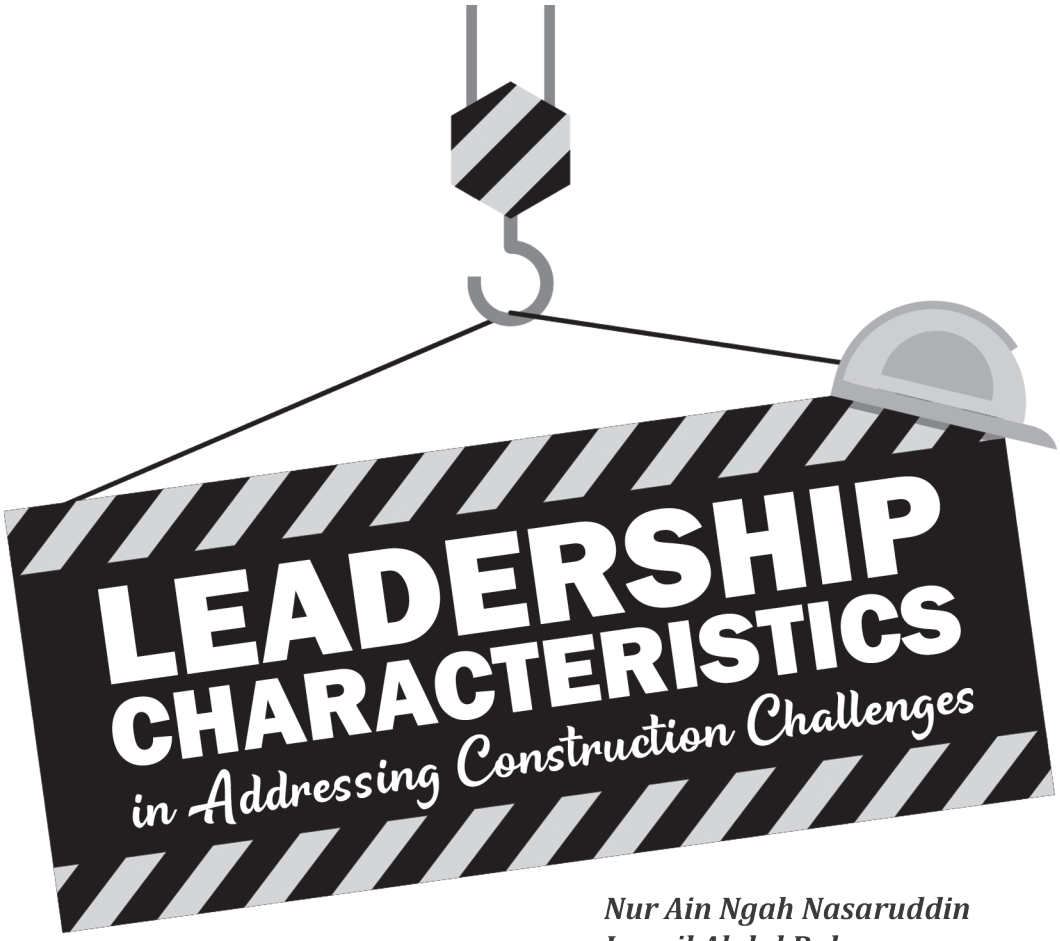
Keywords: Malaysian, economy, growth, transformation

LEADERSHIP CHARACTERISTICS

in Addressing Construction Challenges

Nur Ain Ngah Nasaruddin
Ismail Abdul Rahman

Penerbit UTHM



Nur Ain Ngah Nasaruddin
Ismail Abdul Rahman

Penerbit UTHM
2020

Perpustakaan Negara Malaysia Cataloguing—in—Publication Data

Nur Ain Ngah Nasaruddin
LEADERSHIP CHARACTERISTICS in Addressing Construction Challenges /
Nur Ain Ngah Nasaruddin, Ismail Abdul Rahman.
ISBN 978-967-2389-87-3
1. Leadership.
2. Construction industry--Management.
3. Construction industry.
4. Government publications--Malaysia.
I. Ismail Abdul Rahman. II. Title.
658.4092

Published by:
Penerbit UTHM
Universiti Tun Hussein Onn Malaysia
86400 Parit Raja,
Batu Pahat, Johor
Tel: 07-453 8698 / 8529
Fax: 07-453 6145

Website: http://penerbit.uthm.edu.my
E-mail: pt@uthm.edu.my
http://e-bookstore.uthm.edu.my

Penerbit UTHM is a member of
Majlis Penerbitan Ilmiah Malaysia
(MAPIM)

Printed by:
PERCETAKAN IMPIAN SDN BHD
No. 67 Jalan Bukit 9
Kawasan Perindustrian MIEL
Bandar Baru Seri Alam,
81750 Masai, Johor Bahru

Table of Contents

List of Tables

List of Figures

List of Symbols Abbreviations

M	-	Mean
X	-	Individual data points
N	-	Sample size (number of data points)
S^2	-	Standard deviation
X	-	Individual score
M	-	Mean of all scores
N	-	Sample size (number of scores)
SS	-	Sample size
Z	-	Z value (1.96 for 95% confidence level)
P	-	Percentage picking a choice, expressed as a decimal (0.5 used for sample size needed)
C	-	Margin of error (9 %)
f^2	-	Effect size
$R^2_{included}$	-	Coefficient of determination (R^2) value of the endogenous latent variable when a selected exogenous latent variable is included in from the model
$R^2_{excluded}$	-	Coefficient of determination (R2) value of the endogenous latent variable when a selected exogenous latent variable is excluded from the model
q^2	-	Predictive relevance
$Q^2_{included}$	-	Value of the endogenous latent variable where all the exogenous latent variables are included in the model

$Q^2_{excluded}$	-	Selected exogenous latent variable is excluded from the model
GoF	-	Goodness-of-fit
AVE	-	Average communality
R^2	-	Coefficient of determination
CIDB	-	Construction Industry Development Board
GDP	-	Gross Domestic Product
CITP	-	Construction Industry Transformation Programme
PMO	-	Programme Management Office
MYR		Malaysian Ringgit
CPS	-	Construction project success
SEM	-	Structural equation modeling
PLS-SEM	-	Partial Least Squares Structural Equation Modeling
CB-SEM	-	Covariance-Based Structural Equation Modeling
EFA	-	Exploratory factor analysis
SPSS	-	Statistical Package for Social Sciences
CSV	-	Comma delimited
AVE	-	Average variance extracted

Preface

Construction industry is one of the most important sectors in supporting economy growth and development of a country. However the industry is also facing many issues that leads to construction project failure. It could be attributed from mishandling of challenges that emerged along the construction processes. These challenges issues are related to resources allocation, time, cost, quality, safety, project complexity, changes, uncertainties, and also communication. It requires several approaches to handle these challenges and one of the approaches is to have good leadership characteristics which able to manage challenges effectively. There are many cases of projects failure due to poor leadership in handling construction challenges. Study has shown that poor leadership contributed 67% to the project's failure. Hence, this research book focus on leadership characteristics needed for Malaysia construction industry. The book has successfully uncovered significant leadership characteristics in facing the construction challenges.

This book consisted of 4 chapters where the first chapter is regarding the leadership issues engulfing construction industry. While, the second chapter is about challenges that faced by construction practitioners in the project implementation and identifying the significant leadership characteristics which are need to handle the challenges. The third chapter is on developing structural model which relate the leadership characteristics with the construction challenges. Finally the last chapter is on model's verification and its application. This book is useful to researchers to explore leadership issues in construction industry and also for construction practitioners in evaluating their organizational leadership in handling challenges.

Acknowledgement

Thanks to Allah s.w.t. the Almighty for giving me the opportunity to produce this book based on my PhD study on modelling of leadership characteristics in addressing construction challenges. This book is based on the compilation of my PhD study on model of leadership characteristics in addressing construction challenges. The book is presented to accommodate wider range of readers for appreciating the process and outcomes of the research study which was sponsored by BP Renalcare. Of course, this acknowledgement would not be complete without thanking to my family, who supported me throughout my entire study and encouraged my study's activities. Special thanks to the loving support of my parents that enable me to publish this book. Thanks to all experts in construction industries for contributing and giving helpful input that made this book possible. Not forgotten, I humbly extend my thanks to all concerned persons who co-operated with me in this regard and always look the time to give me feedback.

This book is intended for researchers and also for construction practitioners especially in evaluating the leadership issue in the organization. I hope you will enjoy reading my PhD book about construction leadership.

1

LEADERSHIP AND CONSTRUCTION CHALLENGES

Leadership is not something you do to people,
it's something you do with them.

Blanchard and Muchnick, 2003

1.1 Introduction

At the end of this chapter readers are expected to understand the following items;

i. What is the method applied for literature review work?
ii. What is leadership quality?
iii. What are the benefits, issues, challenges, and leadership characteristics in construction industry?
iv. What are the related studies regarding leadership and construction challenges?

1.2 Literature reviews method

Literature review is an important exercise in a research study. Outcomes from the review works can benefit the research project in three ways. The first way is for the preliminary search that helps to generate and refine research ideas and also to draft research proposal. While the second way is the critical review or critical literature review which provides the context and theoretical framework for the research. Final benefit of the literature is to place the research findings within the wider body of knowledge and forms part of the discussion chapter (Creswell 2012). There are several methods of conducting literature reviews which includes;

2

DATA COLLECTION AND ANALYSIS

A boss has the title, a leader has the people.
Simon Sinek, 2015

2.1 Introduction

At the end of this chapter readers are expected to understand the following items;

i. How the questionnaire was developed?
ii. How pilot study was conducted and analysed?
iii. How questionnaire survey was conducted?
iv. How analysis to determine risk level of the construction challenges?
v. How analysis to determine significant rank of leadership characteristic?
vi. How to categorise leadership characteristics using Exploratory Factor Analysis (EFA)?

2.2 Questionnaire design

Questionnaire is to assess the participant's perception on the subject matter. It is designed based on the nature of questions and the analysis methods. It can be classified in two types where the first type is for closed-ended questions with multiple choice answer options and analysed using quantitative methods. The second type is where the answers obtained from open-ended questionnaire questions and analysed using qualitative methods. It involves discussions and critical analyses without use of numbers and calculations. The identities of respondent must be kept confidential. Length of the questionnaire should keep short and swift to ensure that the time taken by the respondents is not too long with an estimated time of twenty minutes (Revilla & Ochoa, 2017). The contents

3

PLS-SEM MODEL OF LEADERSHIP CHARACTERISTICS WITH CONSTRUCTION CHALLENGES

Leading is spontaneous performance.
Otto Rand, 1995

3.1 Introduction

At the end of this chapter readers sh ould be able to understand the following items:

i. What is concept of PLS-SEM modelling?
ii. How to develop hypothetical model?
iii. How to construct model in SmartPLS-SEM software?
iv. How to conduct assessments of measurement model component?
v. How to conduct assessments of structural model component?
vi. How to conduct assessments of model validating power?

3.2 Structural equation modelling theory

Structural Equation Modelling (SEM) is a statistical method of multivariate analysis based on an iterative approach which tests the relationships between variables within a model. It started with the works of Charles Edward Spearman (1904) a psychologist and Sewall Green Wright (1918) a geneticist who contributed to the SEM development (Tarka, 2018). Basically, the SEM model consists of two basic components of inner (structural model) and outer (measurement model) as in Figure 3.1.

4

MODEL'S VERIFICATION AND APPLICATION

Quality means doing it right when no one is loking.
Henry Ford, 1947

4.1 Introduction

At the end of this chapter readers should be able to understand the following items:

i. How verification of the developed model was conducted?
ii. How the model can be applied in the construction industry?

4.2 Model's framework

In project management, framework consists of the processes, tasks, and tools are used to guide a project from start to finish (Belhadi & Touriki, 2016). The framework provides the basis for understanding the causal or correlational patterns of interconnections across events, ideas, observations, concepts, knowledge, interpretations and other components of experience (Svinicki, 2010). It comprises all the key components required for organizations in planning, managing, and governing projects (Too & Weaver, 2014).

Hence, for this study the developed structural model of leadership characteristics with construction challenges in chapter 3 need to be presented in the form of framework for the understanding and application of the construction practitioners. The developed PLS model which comprised of four groups of leadership characteristics and one group of construction challenges is then transformed into a presentable framework as in Figure 4.1.

Bibliography

Abe, R., Tooher, T., O'Tarpey, M., Watt, G., & Algeo, C. (2014). *Code of Ethics and Professional Conduct*. Australian Institute of Project Management (AIPM), version 3.

Adib, Z.M. & Lee, L.T. (2014, August 2014). MRT: Kontraktor tidak ikut SOP punca nahas-JKKP. *Berita Harian Online*.

Adom, D., Adu-Gyamfi, S., Agyekum, K., Ayarkwa, J., Dwumah, P., Abass, K., ... & Obeng-Denteh, W. (2016). Theoretical and conceptual framework: Mandatory ingredients of a quality research. *Journal of Education and Human Development*, *5*(3), 158-172.

Adwok, J. (2015). Probability Sampling-A Guideline for Quantitative Health Care Research. *Annals of African Surgery*, *12*(2).

Aibinu, A. A., & Al-Lawati, A. M. (2010). Using PLS-SEM technique to model construction organizations' willingness to participate in e-bidding. *Automation in construction*, *19*(6), 714-724.

Akter, S., D'Ambra, J., & Ray, P. (2011). An evaluation of PLS based complex models: the roles of power analysis, predictive relevance and GoF index.

Alhajeri, M. (2011). *Health and Safety in the Construction Industry: Challenges and Solutions in the UAE* (Doctoral dissertation, Coventry University).

Alvi, M. (2016). A manual for selecting sampling techniques in research.

Al-Zahrani, J. (2013). *The Impact of Contractors' Attributes On Construction Project Success* (Doctoral dissertation, The University of Manchester (United Kingdom)).

Amir, J. (2011, March 2). Kontraktor buat kerja 'cincai', kerajaan terima padah. *Berita Harian*. p. 17.

Anderson Jr, L. L., & Polkinghorn, B. (2008). Managing conflict in construction megaprojects: Leadership and third-party principles. *Conflict Resolution Quarterly*, *26*(2), 167-198.

Anderson, S., Allen, P., Peckham, S., & Goodwin, N. (2008). Asking the right questions: scoping studies in the commissioning of research

on the organisation and delivery of health services. *Health research policy and systems*, *6*(1), 7.

Archer, M. M., Verster, J. J., & Zulch, B. G. (2010, July). Leadership in Construction Project Management: Ignorance and Challenges. In *Proceedings 5th Built Environment Conference* (Vol. 18, p. 20).

Arditi, D., & Gunaydin, H. M. (1997). Total quality management in the construction process. *International Journal of Project Management*, *15*(4), 235-243.

Arksey, H., & O'Malley, L. (2005). Scoping studies: towards a methodological framework. *International journal of social research methodology*, *8*(1), 19-32.

Azmi, B. N., Hamimah, A., & Azmi, I. (2018). Construction claim problems in Malaysia: from the contractors perspective. In *MATEC Web of Conferences* (Vol. 192, p. 02004). EDP Sciences.

Bagozzi, R. P., & Yi, Y. (1988). On the evaluation of structural equation models. *Journal of the academy of marketing science*, *16*(1), 74-94.

Banerjee, A., Chitnis, U. B., Jadhav, S. L., Bhawalkar, J. S., & Chaudhury, S. (2009). Hypothesis testing, type I and type II errors. *Industrial psychiatry journal*, *18*(2), 127.

Barrick, M. R., & Mount, M. K. (1991). The big five personality dimensions and job performance: a meta-analysis. *Personnel psychology*, *44*(1), 1-26.

Bass, B. M. (1990). From transactional to transformational leadership: Learning to share the vision. *Organizational dynamics*, *18*(3), 19-31.

Bass, B. M. (1997). Does the transactional–transformational leadership paradigm transcend organizational and national boundaries?. *American psychologist*, *52*(2), 130.

Bass, B. M. (1999). Two decades of research and development in transformational leadership. *European journal of work and organizational psychology*, *8*(1), 9-32.

Bass, B. M., & Steidlmeier, P. (1999). Ethics, character, and authentic transformational leadership behavior. *The leadership quarterly*, *10*(2), 181-217.

Bechhofer, F., & Paterson, L. (2012). *Principles of research design in the social sciences*. Routledge.

Belhadi, A., & Touriki, F. E. (2016). A framework for effective implementation of lean production in small and medium-sized enterprises. *Journal of Industrial Engineering and Management*, *9*(3), 786-810.

Benator, B., & Thumann, A. (2003). *Project Management &Leadership Skills for Engineering & Construction Projects*. Fairmont Press.

Bertram, D. (2007). Likert scales. *Retrieved November*, *2*, 2013.

Bogaerts, M. (2014). *Construction Sector In Malaysia*. Belgian Foreign Trade Agency.

Boland, M., Sweeney, M. R., Scallan, E., Harrington, M., & Staines, A. (2006). Emerging advantages and drawbacks of telephone surveying in public health research in Ireland and the UK. *BMC Public Health*, *6*(1), 208.

Bolden, R., Gosling, J., Marturano, A., & Dennison, P. (2003). *A review of leadership theory and competency frameworks*. Centre for leadership studies, University of Exeter.

Brockmann, C., & Kähkönen, K. (2012). Evaluating construction project complexity. In *CIB Joint International Symposium* (pp. 716-727).

Bubshait, A. A., & Al-Atiq, T. H. (1999). ISO 9000 quality standards in construction. *Journal of Management in Engineering*, *15*(6), 41-46.

Burger, M. (2013). *Project management in the built environment: The need for industry specific knowledge* (Doctoral dissertation, University of the Free State).

Burger, M., Verster, B., & Zulch, B. (2015). The construction project manager in South Africa: Analysis of industry-specific knowledge. *Acta Structilia*, *22*(1), 48-72.

Carpenter S., and Kennedy, W.J.D. Managing Public Disputes. San Francisco: Jossey-Bass, 2001.

Chan, A. P., Scott, D., & Chan, A. P. (2004). Factors affecting the success of a construction project. *Journal of construction engineering and*

management, *130*(1), 153-155.

Chan, A. T., & Chan, E. H. (2005). Impact of perceived leadership styles on work outcomes: Case of building professionals. *Journal of construction engineering and management*, *131*(4), 413-422.

Chan, Y. H., Lee, B. C., & Lee, J. C. (2014). Sustainability in the construction industry in Malaysia: the challenges and breakthroughs. *Int. J. Soc. Behav. Edu. Econ. Bus. Ind. Eng*, *8*, 1218-1222.

Chartered Institute of Building (CIOB) (2007). Leadership in the Construction Industry. Retrieved December 20, 2014, from http://www.ciob.org/sites/ default/files/CIOB%20research% 20%20 Leadership%20in%20the%20Construction%20Industry%202008.pdf.

Cheung, Y. K. F., & Rowlingson, S. (2005). Success factors in an alliancing contract: a case study in Australia.

Chin, W. W. (1998). The partial least squares approach to structural equation modeling. *Modern methods for business research*, *295*(2), 295-336.

Chin, W. W. (2010). How to write up and report PLS analyses. In *Handbook of partial least squares* (pp. 655-690). Springer, Berlin, Heidelberg.

CIDB (2015). *Construction Industry Transformation Programme 2015-2020*. Malaysia: Percetakan Nasional Malaysia Berhad.

CIDB (2016). Contractor Registration Requirements and Procedures Handbook.

CIDB Malaysia (2017). Construction Statistics Quarterly Bulletin Part 1. Retrieved July 7, 2017, from http://www.cidb.gov.my/cidbv4/images/pdf/buletin/ 2017/bahg.%201.pdf.

CIDB Malaysia (2017). Construction Statistics Quarterly Bulletin Part 1. Retrieved July 7, 2017, from http://www.cidb.gov.my/cidbv4/images/pdf/buletin/ 2017/bahg.%201.pdf.

CIDB, CIBPAC, & Tan, L.M. (2012, October 24). Kontraktor tak patuh. *Harian Metro*. p. 2.

Cirovic, G., & Sudjic, S. Risk Assessment in Construction Industry.

CITB-ConstructionSkills (2002). *Innovation, Skills and Productivity*. Retrieved March 10, 2016, from https://www.citb.co.uk/documents/research/innovation_skills_productivity_report_2002_03_tcm17-6852.pdf.

Cohen, J. (1988). *Statistical Power Analysis for the Behavioral Sciences*, 2nd ed., Lawrence Erlbaum, Hillsdale, NJ

Cohen, J. (2013). *Statistical power analysis for the behavioral sciences*. Routledge.

Cohen, M. W., & Palmer, G. R. (2004). Project risk identification and management. *AACE International Transactions*, IN11.

Costantino, C. A., & Merchant, C. S. (1996). *Designing conflict management systems: A guide to creating productive and healthy organizations*. Jossey-Bass.

Creswell, J. W., & Creswell, J. D. (2017). *Research design: Qualitative, quantitative, and mixed methods approaches*. Sage publications.

Cudeck, R. (2000). Exploratory factor analysis. In *Handbook of applied multivariate statistics and mathematical modeling* (pp. 265-296). Academic Press.

Deming, W. E. (1986). Out of the crisis: Quality. *Productivity and Competitive Position, Massachusetts, USA*.

Dillman, D. A. (1991). The design and administration of mail surveys. *Annual review of sociology*, *17*(1), 225-249.

Egan, J. J., Seder, J. E., & Anderson, D. L. (2012). Construction change order management. *Cost Engineering*.

El- Al Kass, M.M.A. (2012). *A Construction Resources Management System for Gaza Strip Building Contractors*. The Islamic University of Gaza: Master's thesis.

Emam, H., Farrell, P., & Abdelaal, M. (2015, September). Causes of delay on infrastructure projects in Qatar. In *Proceedings of the 31st Annual ARCOM Conference, Lincoln, UK, Association of Researchers in Construction Management, Nottingham, UK* (pp. 773-782).

Enshassi, A., & Kaka, A. (1997). Delegation and Span of Management in the Construction Industry. *Delegation and Span of Management in the Construction Industry*, *5*(2).

Etikan, I., Musa, S. A., & Alkassim, R. S. (2016). Comparison of convenience sampling and purposive sampling. *American journal of theoretical and applied statistics*, *5*(1), 1-4.

Falk, R. F., & Miller, N. B. (1992). *A primer for soft modeling*. University of Akron Press.

Farr, J. V., Walesh, S. G., & Forsythe, G. B. (1997). Leadership development for engineering managers. *Journal of Management in Engineering*, *13*(4), 38-41.

Farrell, A. M. (2010). Insufficient discriminant validity: A comment on Bove, Pervan, Beatty, and Shiu (2009). *Journal of business research*, *63*(3), 324-327.

Fellows, R. F., & Liu, A. M. (2015). *Research methods for construction*. John Wiley & Sons.

Fisher, R., Ury, W. L., & Patton, B. (2011). *Getting to yes: Negotiating agreement without giving in*. Penguin.

Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of marketing research*, *18*(1), 39-50.

Fugar, F. D., & Agyakwah-Baah, A. B. (2010). Delays in building construction projects in Ghana. *Construction Economics and Building*, *10*(1-2), 103-116.

Gagné, M., & Deci, E. L. (2005). Self-determination theory and work motivation. *Journal of Organizational behavior*, *26*(4), 331-362.

Garbharran, H., Govender, J., & Msani, T. (2012). Critical success factors influencing project success in the construction industry. *Acta Structilia*, *19*(2), 90-108.

Gefen, D., Straub, D., & Boudreau, M.C. (2010). Structural equation modeling and regression: guidelines for research practice. *Communications of the Association for Information Systems*, 4(1), 7.

Ghani, M.K., Zuhairi, A.H., Zura, M., Ahmad Hazim, A.R., Kamarul Anuar, M.K., & Muhammed Asraff, A.R. (2008). *Safety in Malaysian Construction: The Challenges and Initiatives*.

Gharehbaghi, K., & McManus, K. (2003). The construction manager as a leader. *Leadership and Management in Engineering*, *3*(1), 56-58.

Godden, B. (2004). Sample size calculation. *Retrieved on*, *12*.

Hair Jr, J. F., Hult, G. T. M., Ringle, C., & Sarstedt, M. (2017). *A primer on partial least squares structural equation modeling (PLS-SEM)*. Sage publications.

Halim, M. S. A., Haniff, M. S. M., Junoh, M. Z. M., & Osman, A. (2014). Financial performance and the management issues of Bumiputera construction firms in the Malaysian construction industry. *Journal of Scientific Research & Reports*, *3*(9), 1190-1202.

Hamid, A.A.A. (2012, October 24). Duo who died in bungalow collapse had safety training. *The Sun*. p.10.

Hammuda, I. M., & Dulaimi, M. F. (1997, September). The effects of the situational variables on the leadership styles in construction projects'. In *Proceedings 13th Annual ARCOM Conference* (pp. 22-31).

Hao, Q., Neelamkavil, J., & Shen, W. (2008). *Managing changes in construction*. Institute for Research in Construction, National Research Council Canada.

Hao, Q., Shen, W., Neelamkavil, J., & Thomas, R. (2008). Change management in construction projects. *NRC Institute for Research in Construction, NRCC-50325*.

Hapuarachchi, A., & Senaratne, S. (2008). 5. Construction Project Teams and Their Development: The Case in Sri Lanka. *Post disaster recovery challenges in Sri Lanka*, 39.

Henseler, J., Hubona, G., & Ray, P. A. (2016). Using PLS path modeling in new technology research: updated guidelines. *Industrial management & data systems*, *116*(1), 2-20.

Hesterberg, T. C. (2015). What teachers should know about the bootstrap: Resampling in the undergraduate statistics curriculum. *The American Statistician*, *69*(4), 371-386.

Hirtz, P. D., Murray, S. L., & Riordan, C. A. (2007). The effects of leadership

on quality. *Engineering Management Journal*, *19*(1), 22-27.

Hoezen, M. E. L., Reymen, I. M. M. J., & Dewulf, G. P. M. R. (2006, July). The problem of communication in construction. In *CIB W96 Adaptable Conference, University of Twente)*.

Holbrook, A. L., Green, M. C., & Krosnick, J. A. (2003). Telephone versus face-to-face interviewing of national probability samples with long questionnaires: Comparisons of respondent satisficing and social desirability response bias. *Public opinion quarterly*, *67*(1), 79-125.

Hooper, D. (2012), 'Exploratory Factor Analysis', in Chen, H. (Ed.), Approaches to Quantitative Research – Theory and its Practical Application: A Guide to Dissertation Students, Cork, Ireland: Oak Tree Press.

Howick, S., Ackermann, F., Eden, C., & Williams, T. (2009). Understanding the causes and consequences of disruption and delay in complex projects: how system dynamics can help.

Hulland, J. (1999). Use of partial least squares (PLS) in strategic management research: A review of four recent studies. *Strategic management journal*, *20*(2), 195-204.

Hwang, B. G., & Low, L. K. (2012). Construction project change management in Singapore: Status, importance and impact. *International Journal of Project Management*, *30*(7), 817-826.

Idris, N. (2013). *Penyelidikan dalam pendidikan*. McGraw-Hill Education.

Isa, R. B., Jimoh, R. A., & Achuenu, E. (2013). An overview of the contribution of construction sector to sustainable development in Nigeria. *Net Journal of Business Management*, *1*(1), 1-6.

Jarad, N. G. I. (2012). *The Construction Manager Leading Characteristics for the Success of Construction Projects in the Gaza Strip* (Master dissertation, The Islamic University of Gaza).

Joshua, O.O. (2015*)*. Strategies for resolving legal matters on civil engineering contracts in Nigeria. *International Journal of Construction Engineering and Management*, 4(5), 159-164.

Kamarani, M.K.A.M.R. (2014, December 10). 546 Kontraktor dihadap ke prosiding tatatertib. *Utusan Malaysia*. p. 28.

Kasapoğlu, E. (2017). Industrial Leadership: Leading Within the Field of Construction and Design. In *Contemporary Leadership Challenges*. Intech Open.

Kashif, M., & Kelly, K. (2013). Knowledge management and sharing within project teams: A qualitative study of Ericsson.

Kazembe, I (2016). *Lack of Checks and Balances in Construction Paralyzing the Economy*. Retrieved June 11, 2016, from http://www.manaonline.gov. mw/index.php/business/item/4453-lack-of-checks-and-balances-in-construction-paralyzing-the-economy.

Kelley, K., Clark, B., Brown, V., & Sitzia, J. (2003). Good practice in the conduct and reporting of survey research. *International Journal for Quality in health care*, *15*(3), 261-266.

Kerzner, H. (2017). *Project management: a systems approach to planning, scheduling, and controlling*. John Wiley & Sons.

Kirkpatick, S. A., & Locke, E. A. (1991). Leadership: do traits matter?. *Academy of Management Perspectives*, *5*(2), 48-60.

Kiu, M. S., Riazi, M., Riazi, S., Nawi, M., Nasrun, M., & Esa, M. (2017). The roles, challenges & improvement of project manager in project financial management in building development in Penang, Malaysia. *International Journal of Supply Chain Management (IJSCM)*, *6*(1), 238-245.

Kuhnert, K. W., & Lewis, P. (1987). Transactional and transformational leadership: A constructive/developmental analysis. *Academy of Management review*, *12*(4), 648-657.

Kumari, K. S., & Vikranth, J. (2012). A Study On Resource Planning In Highway Construction Projects. *International Journal of Engineering Research and Applications*, *2*(4), 1960-1967.

Lam, S., & Tang, C. (2003). Motivation of survey employees in construction projects. *Journal of geospatial engineering*, *5*(1), 61-66.

Lambert, S. D., & Loiselle, C. G. (2008). Combining individual interviews and focus groups to enhance data richness. *Journal of advanced nursing*, *62*(2), 228-237.

Larson, E. W., & Gray, C. F. (2015). A Guide to the Project Management

Body of Knowledge: PMBOK (®) Guide. Project Management Institute.

Latham, M. (1994). Constructing the team: the final report of the joint government/industry review of procurement and contractual arrangements in the UK construction industry. *Her Majesty's Stationary Office (HMSO), London*.

Lazarus, D., & Clifton, R. (2001). *Managing project change: A best practice guide*. Ciria.

Lee, L.T. (2014, July 3). Pengendali LRT perlu teliti aspek keselamatan. *Utusan Malaysia Online*.

Levac, D., Colquhoun, H., & O'Brien, K. K. (2010). Scoping studies: advancing the methodology. *Implementation science*, *5*(1), 69.

Lichtenberg, S. (2006). The Successive Principle–a scientific crystal ball for management. *The IPSI BgD Transactions on Internet Research*, *2*(1), 33-39.

Liu, Y. (2009). *Critical factors for managing project communication among participants at the construction stage* (Doctoral dissertation, The Hong Kong Polytechnic University).

Loehlin, J. C., & Beaujean, A. (2017). Latent variable models: an introduction to factor, path, and structural equation analysis (5th ed.). Mahwah, N.J.: Routledge.

Lunenburg, F. C. (2011). Leadership versus management: A key distinction—at least in theory. *International Journal of Management, Business, and Administration*, *14*(1), 1-4.

Lussier, R. N., & Achua, C. F. (2010). Leadership: Theory Application and Skill Development, USA: Cengage Learning.

Maaroufi, S., & Asad, A. (2017). Leadership Style & Challenges of MCT Management: Case Study-Swedish Construction MNC.

Mansor FD, FD.I. (2008, January 21). Kenaikan harga besi, simen beri kesan kepada industri perumahan. *Utusan Malaysia Online*.

Mathers, N., Fox, N., & Hunn, A. (1998). Trent focus for research and development in primary health care: Using interviews in a research

project. *Trent Focus*.

Mathers, N., Fox, N., & Hunn, A. (2007). Surveys and questionnaires. *The NIHR RDS for the East Midlands/Yorkshire & the Humber*.

McDonald, B. (2015). Leadership development in the construction industry. *A Renew Leadership White Paper.*

Mentis, M. (2015). Managing project risks and uncertainties. *Forest ecosystems*, *2*(1), 2.

Michaelidou, N., & Dibb, S. (2006). Using email questionnaires for research: Good practice in tackling non-response. *Journal of Targeting, Measurement and Analysis for Marketing*, *14*(4), 289-296.

Milosevic, I. N. (2010). Practical application of SWOT analysis in the management of a construction project. *Leadership and Management in Engineering*, *10*(2), 78-86.

Ministry of Finance Malaysia (2006). Economic Report 2006/2007. Retrieved January 14, 2015, from http://www.treasury.gov.my/pdf/economy/er/0607/ chapter3.pdf.

Ministry of Finance Malaysia (2007). *Economic Report 2007/2008*. Retrieved January 14, 2015, from http://www.treasury.gov.my/pdf/economy/er/0708/ chapter3.pdf.

Ministry of Finance Malaysia (2008). *Economic Report 2008/2009*. Retrieved January 14, 2015, from http://www.treasury.gov.my/pdf/economy/er/0809/ chapter3.pdf.

Ministry of Finance Malaysia (2009). *Economic Report 2009/2010*. Retrieved January 14, 2015, from http://www.treasury.gov.my/pdf/economy/er/0910/ chapter3.pdf.

Ministry of Finance Malaysia (2010). *Economic Report 2010/2011*. Retrieved January 14, 2015, from http://www.treasury.gov.my/pdf/economy/er/1011/ chapter3.pdf.

Ministry of Finance Malaysia (2011). *Economic Report 2011/2012*. Retrieved January 14, 2015, from http://www.treasury.gov.my/pdf/economy/er/1112/ chapter3.pdf.

Ministry of Finance Malaysia (2012). *Economic Report 2012/2013*. Retrieved January 14, 2015, from http://www.treasury.gov.my/pdf/economy/er/1213/ chapter3.pdf.

Ministry of Finance Malaysia (2013). *Economic Report 2013/2014*. Retrieved January 14, 2015, from http://www.treasury.gov.my/pdf/economy/er/1314/ chapter3.pdf.

Ministry of Finance Malaysia (2014). *Economic Report 2014/2015*. Retrieved January 14, 2015, from http://www.treasury.gov.my/pdf/economy/er/1415/ chapter3.pdf.

Ministry of Finance Malaysia (2014). *Economic Report 2015/2016*. Retrieved November 7, 2018, from http://www.treasury.gov.my/pdf/economy/er/1415/ chapter3.pdf.

Ministry of Finance Malaysia (2014). *Economic Report 2016/2017*. Retrieved November 7, 2018, from http://www.treasury.gov.my/pdf/economy/er/1415/ chapter3.pdf.

Mircioiu, C., & Atkinson, J. (2017). A comparison of parametric and non-parametric methods applied to a likert scale. *Pharmacy*, *5*(2), 26.

Mohajan, H. K. (2017). Two criteria for good measurements in research: Validity and reliability. *Annals of Spiru Haret University. Economic Series*, *17*(4), 59-82.

Mohanty, S. (2014). A Leader with Positive Attitude and thinking can bring great Success. *International Journal of Emerging Research in Management & Technology*, *3*(2).

Morse, J. M., Barrett, M., Mayan, M., Olson, K., & Spiers, J. (2002). Verification strategies for establishing reliability and validity in qualitative research. *International journal of qualitative methods*, *1*(2), 13-22.

Mouchi, G., Olabode Rotimi, J., & Ramachandra, T. (2011). The skill sets required for managing complex construction projects. *Business Education & Administration*, *3*(1), 89-100.

Muir, B. (2005). Challenges facing today's construction manager. *Supplemental Reading for CIEG*, 486-010.

Müller, R., & Turner, R. (2010). Leadership competency profiles of successful project managers. *International Journal of project management*, *28*(5), 437-448.

Mulvihill, C., & Haworth, N. (2005, November). Using the internet to collect survey data. Lessons from a survey of older riders in Australia. In *Proceedings Australasian Road Safety Research*

Policing Education Conference (pp. 14-16).

Munns, A. K., & Bjeirmi, B. F. (1996). The role of project management in achieving project success. *International journal of project management*, *14*(2), 81-87.

Murch, R. (2001). *Project management: Best practices for IT professionals*. Prentice Hall Professional.

Nasaruddin, N. A. N., & Rahman, I. A. (2017). Exploratory Study on Malaysia Construction Leadership. In *MATEC Web of Conferences* (Vol. 103, p. 03005). EDP Sciences.

Nasir, N., Nawi, M. N. M., & Radzuan, K. (2016, August). Relationship between time management in construction industry and project management performance. In *AIP Conference Proceedings* (Vol. 1761, No. 1, p. 020079). AIP Publishing.

Ng, S. T., Skitmore, R. M., Lam, K. C., & Poon, A. W. (2004). Demotivating factors influencing the productivity of civil engineering projects. *International journal of project Management*, *22*(2), 139-146.

Non, J. (2013, February 27). Contractors lack experience. *New Straits Times*. p. 22.

Northouse, P. G. (2018). *Leadership: Theory and practice*. Sage publications.

Nuruddin, A. R., Bakar, S. P. S. A., & Jaafar, M. (2015). Unveiling the challenges faced by Malaysian housing developers through government policy changes. *Journal of Construction in Developing Countries*, *20*(2), 37.

Okoye, P. U., Ngwu, C., & Ugochukwu, S. C. (2015). Evaluation of management challenges facing construction practice in Nigeria. *International Journal of Application or Innovation in Engineering & Management*, *4*(1), 19-28.

Othman, E., & Ahmed, A. (2013). Challenges of mega construction projects in developing countries. *Organization, technology & management in construction: an international journal*, *5*(1), 730-746.

Ozorovskaja, R., Voordijk, J. T., & Wilderom, C. P. (2007). Leadership and cultures of Lithuanian and Dutch construction firms. *Journal of construction engineering and management*, *133*(11), 900-911.

Patil, S. M., Desai, D. B., & Gupta, A. K. (2015). Earned value analysis in construction industry. *International Journal of Informative & Futuristic Research Paper ID JIFR/MH/2015/SI-I/003*.

Persson, M. (2013). Making use of knowledge on the construction site. In *Proceedings of the 19th CIB World Building Congress, Brisbane 2013: Construction and Society;*. Queensland University of Technology.

Peters, M. D., Godfrey, C. M., Khalil, H., McInerney, P., Parker, D., & Soares, C. B. (2015). Guidance for conducting systematic scoping reviews. *International journal of evidence-based healthcare*, *13*(3), 141-146.

Popov, S. (2014). Expert Verification Of The Research Results: Public Administration Aspect. *Journal of Public Administration, Finance and Law*, (05), 34-42.

Preece, C., & Stocking, S. (1999). Safety communications management in construction contracting. In *Hughes, W, 15th Annual ARCOM Conference, Liverpool John Moores University*.

Public Accounts Committee (PAC) (2015, August 5). Kontraktor asal HSA dikenakan tindakan. *Berita Harian*. p. 14.

Puspadevi, S. (2015). *Obstacles to Construction Growth*. Retrived January 2, 2015, from http://www.thestar.com.my/Business/Business-News/2015/01/02/ Obstacles-to-construction-growth-Low-oil-price-tight-fiscal-measures-and-GST-may-limit-the-sectors-e/?style=biz.

Radion, T. (2013, September 23). Harga minyak jejas kontraktor. *Sinar Harian*. p. 3.

Rahman, I. A., Nagapan, S., & Asmi, A. (2014). Initial PLS model of construction waste factors. *Procedia-social and behavioral sciences*, *129*, 469-474.

Rahman, I. A., Nagapan, S., & Asmi, A. (2014). Initial PLS model of construction waste factors. *Procedia-social and behavioral sciences*, *129*, 469-474.

Rahman, S. H. A., Endut, I. R., Faisol, N., & Paydar, S. (2014). The importance of collaboration in construction industry from contractors' perspectives. *Procedia-Social and Behavioral Sciences*, *129*, 414-421.

Rahmat, N. I. B. (2016). *Success factors for bumiputra contractors in Malaysia: Johor state* (Master dissertation, Universiti Tun Hussein Onn Malaysia).

Razak, A.M. (2015, February 27). One worker killed, another hurt in MRT Semantan mishap. *Malay Mail Online*.

Revilla, M., & Ochoa, C. (2017). Ideal and maximum length for a web survey. *International Journal of Market Research*, *59*(5), 557-565.

Rezakhani, P. (2012). Classifying key risk factors in construction projects. *Buletinul Institutului Politehnic din lasi. Sectia Constructii, Arhitectura*, *58*(2), 27.

Rietveld, T., & Van Hout, R. (2011). *Statistical techniques for the study of language and language behaviour*. Walter de Gruyter.

Rose, K. H. (2017). A Guide to the Project Management Body of Knowledge (PMBOK® Guide)—Sixth Edition. *Project management journal*, *44*(3), e1-e1.

Rounds, J. L., & Segner, R. O. (2010). *Construction supervision*. John Wiley & Sons.

Rowlinson, S. (2014). *Cost Escalation in The Hong Kong Construction Industry Repor*t. Retrieved March 28 from http://www.hkca.com.hk/uploads /eversioin_docs /533e9c0e27ef74b446779b84ee3261bf.pdf.

Rubin, D. K., Powers, M. B., Tulacz, G., Winston, S., & Krizan, W. G. (2002). Leaders come in all shapes and sizes but the great ones focus on people construction demands new skill sets from rising stars. *ENR*, *249*(23), 34-34.

Rumsey, D. J. (2015). How to interpret standard deviation in a statistical data set.

Ryan, F., Coughlan, M., & Cronin, P. (2009). Interviewing in qualitative research: The one-to-one interview. *International Journal of Therapy and Rehabilitation*, *16*(6), 309-314.

Said, A. (2013, February 23). MB Terengganu akui kontraktor lemah punca bumbung runtuh kali kedua. *The Malaysian Insider*.

Salleh, R. (2009). *Critical success factors of project management for Brunei construction projects: improving project performance* (Doctoral dissertation, Queensland University of Technology).

Sambasivan, M., & Soon, Y. W. (2007). Causes and effects of delays in Malaysian construction industry. *International Journal of project management*, *25*(5), 517-526.

Sarstedt, M., Hair, J. F., Ringle, C. M., Thiele, K. O., & Gudergan, S. P. (2016). Estimation issues with PLS and CBSEM: Where the bias lies!. *Journal of Business Research*, *69*(10), 3998-4010.

Sekaran, U., & Bougie, R. (2016). *Research methods for business: A skill building approach*. John Wiley & Sons.

Sessions, M. (2014). *Construction Leader's 3 Most Important Decisions*. Retrieved December 13, 2015, from https://www.linkedin.com/pulse/20140716181904-40747168-construction-leader-s-3-most-important-decisions.

Shamir, Y., & Kutner, R. (2003). *Alternative dispute resolution approaches and their application*. Unesco.

Sharma, G. (2017). Pros and cons of different sampling techniques. *International Journal of Applied Research*, *3*(7), 749-752.

Shibani, A., & Sukumar, D. (2015). The Role of the Project Manager in Construction Projects in India. *Chinese Business Review*, *14*(6), 298-324.

Simić, I. (1998). *Transformational leadership-the key to successful management of transformational organizational changes*.

Smith, C. (2005). Servant leadership: The leadership theory of Robert K. Greenleaf. *Unpublished coursework. Retrieved from: http://www. carolsmith. us/downloads/640greenleaf. pdf*.

Spears, L. C. (2010). Character and servant leadership: Ten characteristics of effective, caring leaders. *The Journal of Virtues & Leadership*, *1*(1), 25-30.

Subramaniam, S (2015, August 5). Hospital Shah Alam beroperasi Oktober. *Utusan Malaysia*. p 11.

Subramanyam, K., & Haridharan, M. K. (2017, July). Examining the Challenging Hindrances facing in the Construction Projects: South India's Perspective. In *IOP Conference Series: Earth and Environmental Science* (Vol. 80, No. 1, p. 012045). IOP Publishing.

Susskind, L., Lawrence Susskind, S., & Field, P. (1996). *Dealing with an angry public: The mutual gains approach to resolving disputes*. Simon and Schuster.

Svinicki, M. D. (2010). A guidebook on conceptual frameworks for research in engineering education. *Rigorous Research in Engineering Education*, 1-53.

Swan, W., McDermott, P., Wood, G., Abott, C., & Thomas, A. (2002). *Trust in construction: achieving cultural change*. Manchester: Centre for Construction Innovation.

Szolnoki, G., & Hoffmann, D. (2013). Online, face-to-face and telephone surveys—Comparing different sampling methods in wine consumer research. *Wine Economics and Policy*, *2*(2), 57-66.

Taherdoost, H. A. M. E. D., Sahibuddin, S. H. A. M. S. U. L., & Jalaliyoon, N. E. D. A. (2014). Exploratory factor analysis; concepts and theory. *Advances in Applied and Pure Mathematics*, *375382*.

Taleb, H., Ismail, S., Wahab, M. H., Mardiah, W. N., Rani, W. M., & Amat, R. C. (2017). An overview of project communication management in construction industry projects. *Journal of Management, Economics, and Industrial Organization*, *1*(1), 1-8.

Tang, P., Mukherjee, A., & Onder, N. (2010). Studying dynamic decision-making in construction management using adaptive interactive simulations. In *Construction Research Congress 2010: Innovation for Reshaping Construction Practice* (pp. 379-388).

Tarka, P. (2018). An overview of structural equation modeling: its beginnings, historical development, usefulness and controversies in the social sciences. *Quality & quantity*, *52*(1), 313-354.

Tavakol, M. & Dennick. R. (2011). Making sense of cronbach's alpha. *International Journal of Medical Education*, 2, 53-55.

Tenenhaus, M., Vinzi, V. E., Chatelin, Y. M., & Lauro, C. (2005). PLS path modeling. *Computational statistics & data analysis*, *48*(1), 159-205.

The Economic Planning Unit (2010). *Tenth Malysia Plan 2011-2015*. Retrieved February 21, 2015, from https://www.pmo.gov.my/dokumenattached/RMK/ RMK10_Eds.pdf.

The Economic Planning Unit (2015). *Eleventh Malaysia Plan, 2016-2020*. Retrieved July 30, 2016, from https://www.pmo.gov.my/dokumenattached/RMK/ RMK11_Eds.pdf.

Thobakgale, M. E., Aigbavboa, C. O., & Thwala, W. D. (2014). Professional's perception on the causes and effects of disputes in the construction industry–a theoretical exploration. In *6th International Conference on Humanities, Geography and Economics* (pp. 135-137).

Thompson, K. N. (2010). Servant-leadership: An effective model for project management. *Unpublished doctoral dissertation). Capella University, Minneapolis, MN*.

Tipili, L. G., & Ojeba, P. O. (2014, July). Evaluating the effects of communication in construction project delivery in Nigeria. In *Proceedings of the Multi-Disciplinary Academic Conference on Sustainable Development*.

Too, E. G., & Weaver, P. (2014). The management of project management: A conceptual framework for project governance. *International Journal of Project Management*, *32*(8), 1382-1394.

Toor, S. U. R., & Ofori, G. O. (2006, November). In quest of leadership in construction industry: new arenas, new challenges!. In *Proceedings of the Joint International Conference on Construction Culture, Innovation, and Management (CCIM)* (pp. 18-31). Dubai, UAE.

Tran, D. Q., Hallowell, M. R., & Molenaar, K. R. (2014). Construction management challenges and best practices for rural transit projects. *Journal of Management in Engineering*, *31*(5), 04014072.

Tricco, A. C., Lillie, E., Zarin, W., O'Brien, K., Colquhoun, H., Kastner, M., Levac, D., Ng, C., Sharpe, J.P., Wilson, K. & Kenny, M. (2016). A scoping review on the conduct and reporting of scoping reviews. *BMC medical research methodology*, *16*(1), 15.

Turner, J. R., & Müller, R. (2005). The project manager's leadership style as a success factor on projects: A literature review. *Project management journal*, *36*(2), 49-61.

Udhayakumar, R., & Karthikeyan, P. (2014). Expected leadership qualities for a project manager to manage construction projects. *Int. J. of Innovative Research and Development*, *3*, 57-61.

Ugochukwu, S. C., & Onyekwena, T. (2014). Participation of indigenous contractors in Nigerian public sector construction projects and their challenges in managing working capital. *International Journal of Civil Engineering, Construction and Estate Management*, *1*(1), 1-21.

Urbach, N., & Ahlemann, F. (2010). Structural equation modeling in information systems research using partial least squares. *Journal of Information technology theory and application*, *11*(2), 5-40.

Valenzuela, D., & Shrivastava, P. (2002). Interview as a method for qualitative research. *Southern Cross University and the Southern Cross Institute of Action Research (SCIAR)*.

Vidivelli, K. J. D. B., & Surjith, E. G. (2014). Risk assessment and management in construction projects. *International Journal of Scientific & Engineering Research*, *5*(8), 387-396.

Weaver, P. (2010). The Effective Management of Time on Mega Projects. *Mosaic Project Services Pty Ltd*.

Weiss, N.A. (2012). *Elementary Statistics*. 8th ed. Boston: Pearson Education, Inc.

Wetzels, M., Odekerken-Schröder, G., & Van Oppen, C. (2009). Using PLS path modeling for assessing hierarchical construct models: Guidelines and empirical illustration. *MIS quarterly*, 177-195.

Wideman, R. M. (1990). Managing the project environment. In *Dimensions of project management* (pp. 51-69). Springer, Berlin, Heidelberg.

Winch, G. M. (2010). *Managing construction projects*. John Wiley & Sons.

Wood, H., & Ashton, P. (2010). The Factors of Project Complexity. CIB.

Wood, H., & Gidado, K. (2008). Project complexity in construction. *COBRA 2008*, 1-13.

Wynne, C. W. (1998). Issues and opinion on structural equation modelling. *Management Information Systems quarterly*, *22*(1), 1-8.

Yaakob, I.S. (2014, April 9). Kontraktor diberi tempoh 2 bulan. *Utusan Malaysia* Online.

Yadollahi, M., Mirghasemi, M., Mohamad Zin, R., & Singh, B. (2014). Architect critical challenges as a project manager in construction projects: a case study. *Advances in Civil Engineering*, *2014*.

Yahaya, A., Hashim, S., Ramli, J., Boon, Y., & Hamdan, A.R. (2007). *Menguasai Penyelidikan Dalam Pendidikan: Teori, Analisis & Interpretasi Data*. PTS Professional.

Yakhchali, S.H., & Farsani, H.H. (2013). Do different project categories need different leadership styles. In *2nd International Conference on Management, Behavioral Sciences and Economics Issues*, 17-18.

Yong, A. G., & Pearce, S. (2013). A beginner's guide to factor analysis: Focusing on exploratory factor analysis. *Tutorials in quantitative methods for psychology*, *9*(2), 79-94.

Yukl, G. (2010). Leadership in Organizations: Global Edition. *Harlow: Pearson*.

Yukl, G., & Mahsud, R. (2010). Why flexible and adaptive leadership is essential. *Consulting Psychology Journal: practice and research*, *62*(2), 81.

Yusof, Z.M. (2009, June 4). Punca projek gagal siap ikut jadual, cara atasinya. *Utusan Malaysia Online*.

Zaiț, A., & Bertea, P. S. P. E. (2011). Methods for testing discriminant validity. *Management & Marketing Journal*, *9*(2), 217-224.

Zaiț, A., & Bertea, P.S.P.E. (2011). Methods for testing discriminant validity. *Management & Marketing Journal*, *9*(2), 217-224.

Zavadskas, E. K., Juozapaitis, A., Tamošaitienė, J., & Turskis, Z. (2015). Leadership Strategy Selection in Construction Industry. *Procedia Engineering*, *122*, 191-195.

Zulch, B. G. (2012). *The construction project manager as communicator in the property development and construction industries* (Doctoral dissertation, University of the Free State).