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The Strategic JOURNAL of Business & Change MANAGEMENT
ISSN: 2312-9492 www.strategicjournals.com

Vol. 6, Iss. 2, pp 2138 - 2147, May 28, 2019. www.strategicjournals.com, ©Strategic Journals

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Accepted: May 27, 2019

ABSTRACT

Risk management is an idea which has become very popular among the researchers. Many firms are often instituting a risk management technique in their projects for refining the performance of the projects. One aspect of risk management is Risk Avoidance. Risk avoidance implies declining to acknowledge the hazard by any means. Projects undertaken in the construction sector are generally complex and often have significant budgets, and thus understanding of the strategies to an employee in reducing the risks associated with these projects should be of importance for the project managers. The general objective of this study was to assess the effect of risk avoidance strategy on the success of construction projects. The target population consisted of 60 employees drawn from Narok county courts, which comprises of Narok Law courts and Kilgoris Law Courts. Data were collected from 45 respondents drawn from employees who took part in the day to day running of the projects in these two courts. The descriptive survey research design was used in this study. Data collected was analyzed and interpreted. The qualitative data was analyzed in field and subfield as per objectives and quantitative data was analyzed using descriptive statistics namely mean, score, percentages and frequent distribution. Inferential statistics that is correlation and regression analysis was used to establish the effect of risk avoidance strategy on the success of construction projects in the Judiciary. The SPSS version 23.0 was used as the tool for data analysis. The results showed that majority of the respondents indicated that there was a weak correlation (r = 0.118) between risk avoidance and project success which was not significant since the P- value was > 0.05. This showed that though risk avoidance might be an important risk mitigating strategy in project management but its effect on the success of the project is not significant. This implies that there might not be a statistical relation between risk avoidance and the success of a project.

Keywords: *Risk Avoidance, Construction projects, Success*

CITATION: Nturanu, J. N., & Mundia, M. (2019). Effect of risk avoidance strategy on the success of construction projects in the judiciary at Narok County Courts. *The Strategic Journal of Business & Change Management,* 6 (2), 2138 – 2147.

INTRODUCTION

Construction projects are unique and complex in nature which usually take long period of time and it usually demand a lot of resources which include among them people, finance, materials, intellectual property (Odimabo & Oduoza,2013). These projects usually have defined objectives which are usually specific and general which helps the stakeholders to get a gist of a clear vision and specification requirements of each and every goal that the project wish to undertake.

Management of risks ordinarily helps the project managers in setting the priorities of the project, allocating enough resources for the timely completion of the project and equipping them with knowledge of implementing actions and processes that reduce the occurrence of risks and explain further why most of the projects do not achieve its planned objectives. Decision making in projects is made easy by risks management as it provides an understanding, information and assurance by supporting good decisions about planning and design processes which helps prevent or avoid further risks as well as deal with risks and their impacts which aid in contingency planning, thus ensuring better allocation of resources to risks and to the alignment of the projects. (Zhao, Hwang, & Low, 2013).

Statement of the Problem

In spite of the efforts by all actors in the construction industry, many construction projects in developing countries and generally in the African region and the world run a high risk of poor performance due to poor scheduling, time and cost overruns. The industry has generally performed poorly due to its high level of risk. Prior studies have showed that while some degree of poor cost and time schedule performance is inevitable in construction projects, an evaluation of risk management strategies is a subject that needs a lot of consideration to minimize their negative impact and thus improve the project performance. Wallace and Blumkin (2007) considered risks in the planning stage of construction project where such concerns such as poor scope definition, poor estimating and development of a budget are based on incomplete data. Hamburger (2010) and Murray et al (2013) in their study on project risks suggested the use of contingency fund in risk management; this amount is often an arbitrary figure of 10% to 20% of the estimated contract amount or project duration. They however, noted that the sum does not take into attention the specific features of each project and can thus not be said to be effective risk management strategies in construction projects. It is estimated that a well-developed risk management strategy can reduce the failure rate of the project as much as about 60-70 % [PMBOK, 2013].

There is limited research on understanding the risk management strategies in construction projects in Kenya. Despite the dimensions of literature on risk management in the construction industry, delays and cost overrun remain an everyday experience in most of these projects. There is therefore need for research to develop a better understanding of what effective risk management strategies are in relation to construction industry.

Objective of the Study

The objective of the study was to assess the effect of risk avoidance on the success of construction projects in the Judiciary Narok county courts

Research Hypothesis

H_0: Risk avoidance does not have a significant influence on the success of construction projects in the Judiciary Narok county courts.

LITERATURE REVIEW

Theoretical Review

Complexity Theory of Risk

This theory was advanced by Adam Smith (1776). The technique was embraced from the unpredictable frameworks hypothesis, and it clarifies the mind

The Strategic Journal of Business & Change Management. **ISSN** 2312-9492 (Online) 2414-8970 (Print). www.strategicjournals.com

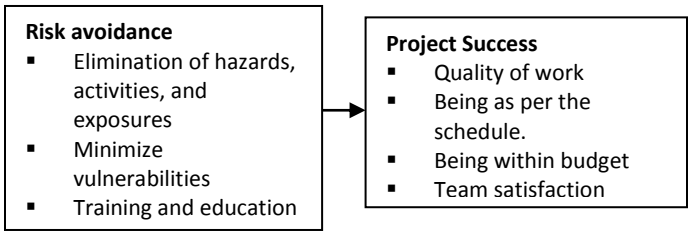
boggling nature of associations. He takes note of that however a few hypotheses clarify the unpredictable idea of associations the complexity theory advocates the development of a culture of trust that encourages the association to invite outcasts, grasp the new thought and advance collaboration among the different frameworks. Mulholland and Christian (1999) bolster this further, including development ventures are started in unpredictable and dynamic conditions bringing about conditions of high vulnerability and hazard, which are exacerbated by requesting time requirements.

The hypothesis has been connected in hazard the executives by Smith and Graetz (2006) and Smith and Humphries (2004) who noticed that the multifaceted nature hypothesis is hard to convert into training. Additionally, Manson (2001) showed that while multifaceted nature hypothesis has gained critical ground, it remains a tricky point of view with regards to articulating sharp definitions. In any case, there is additionally the conclusion that multifaceted nature science can be a reasonable answer for current logical and mechanical issues. McElroy (2000) depicted intricacy hypothesis as a sure arrangement looking for changed issues clarifying how living frameworks take part in versatile learning. Smith and Graetz (2006) proceed to clear up that the impediment with multifaceted nature hypothesis, notwithstanding, is that its illustrative esteem is more obvious than its prescriptive execution; a side-effect of its very nature, that of non-straight ordinary communication.

Summers and Holmes, (2006), characterizes multifaceted nature as "the state or nature of being mind boggling or complex," where complex is characterized as "made up of many interconnecting parts." Complexity is a term regularly utilized while talking about development ventures. By and large, development ventures are altogether comprised of many interconnecting parts, so in that viewpoint fit the word reference meaning of unpredictability well. Be that as it may, multifaceted nature can be seen as more than the straightforward clarification we have up until this point. It is a joint proclamation that the development procedure is a standout amongst the most intricate and hazardous organizations embraced, Baccarini (1996) states that the development procedure might be viewed as the most unpredictable endeavour in any industry. In any case, the development business has created incredible trouble in adapting to the expanding multifaceted nature of significant development ventures. Mulholland and Christian (1999) bolster this further, including development ventures are started in perplexing and dynamic conditions bringing about conditions of high vulnerability and hazard, which are exacerbated by requesting time requirements.

By distinguishing the intricacy that exists because of the association of exercises, it is conceivable to oversee and control that multifaceted nature. Gidado (2004) additionally distinguished that venture multifaceted nature has six primary segments, each made up of a few meeting factors, and these are intrinsic unpredictability; vulnerability; the quantity of innovations; unbending nature of arrangement; cover of stages or simultaneousness; and hierarchical intricacy.

Conceptual Framework



Independent Variable **Dependent Variable**

Figure 1: Conceptual Framework

Source: Author (2019)

Risk avoidance and the success of construction projects

Risk avoidance implies declining to acknowledge the hazard by any means (Rezakhani 2012). The qualitative evaluation has uncovered such high-risk

introduction that the risk ought to be eradicated. To destroy the risk, research is fundamental into whether the potential wellspring of hazard can be abolished or not, the negative occasion where the risk is innate. The cruellest method for keeping away from hazard is not to acknowledge the agreement and to surrender the undertaking. Dangers can likewise be dodged by presenting an agreement provision whereby a few risks that are due to their results will not be acknowledged. Ropel (2011) propose applying known and well-created procedures rather than new ones, regardless of whether new ones may have all the earmarks of being more cost-effective. Along these lines, the dangers can be avoided, and work can continue easily in light of the fact that the procedure is less distressing for the users.

In the event that the risk is ordered as passing on negative outcomes to the entire venture, it is of significance to audit the project's goal. At the end of the day, if the risk significantly affects the construction project, the best arrangement is to maintain a strategic distance from it by changing the extent of the undertaking or most exceedingly worst scenario, drop it. There are numerous potential hazards that a venture can be presented to, and which can affect its prosperity (Potts, 2008). This is the reason risk management is required in the beginning stages of a venture as opposed to managing the harm after the event of the hazard (Darnall and Preston, 2010). The shirking implies that considering the options in the project, numerous risks can be disposed of. On the off chance that basic changes are required in the task to eradicate risks, Darnall and Preston (2010) recommend that applying known and well-created methodologies rather than new ones, regardless of whether the new ones may seem, by all accounts, to be more cost effective. In this regard, the hazards can be eliminated, and work can continue easily on the grounds that the procedure is less upsetting to the clients.

Risk avoidance is the disposal of risks, exercises, and exposures that can adversely influence a firm's benefits. A hazard avoidance strategy is intended to redirect whatever number of risks as could reasonably be expected to stay away from the exorbitant and troublesome results of a destructive occasion (Koenet et al. 2007). A risk evasion approach as well endeavors to limit vulnerabilities which can represent a danger to the project at stake. Risk shirking and relief can be accomplished through policy and procedure, training and education, and technology usage as detailed by Wagner and Bode (2009).

This incorporates not playing out a movement that could convey risk to the construction project. An example would be not purchasing a property or business altogether to not take on the lawful obligation that accompanies it. Evasion may appear the response to all hazards, however, keeping away from risks likewise implies missing out on the potential increase that tolerant (holding) the risk may have allowed. Not entering a business to dodge the risk of misfortune additionally prevents the likelihood of gaining profits. Expanding risk regulation in health centers has prompted avoidance of treating higher hazard conditions, for patients giving lower chance. It is very much acknowledged that risk can be successfully figured out on how to relieve its unfavorable effects on task goals, regardless of whether it is inescapable in all project endeavours as Wagner & Bode (2009) explains.

Cleden (2009) has demonstrated that the source of hazard incorporates innate vulnerabilities and issues identified with the organization's fluctuating project edge, focused offering process, work site profitability and the political circumstance, inflation, authoritative rights, and market rivalry, and so forth. Rezakhani (2012) stipulated that it is basic for the development organizations to confront these uncertain dangers by surveying their consequences for the project targets in light of the fact that a quantitative hazard

technique permits choosing which of the project is increasingly hazardous, getting ready for the potential sources of dangers in each venture, and dealing with each of them amid development. Cleden (2009) further noticed that it is basic that risk is recognized from vulnerability. The one is quantifiable vulnerability, and the other is an inconceivable risk. On the off chance that the hazard is named conveying adverse outcomes to the entire venture, it is of significance to audit the project's aim. As such, if the risk significantly affects the undertaking, the best arrangement is to maintain a strategic distance from it by changing the scope of the venture, most noticeably awful scenario, cancel it (Hanna, Blasier, &Aoun, 2015).

Project Success

PMI (2013) defines project as a temporary undertaking to create unique product, service and result. It further defines project management as the application of knowledge, skills, tools and techniques to project activities to meet the project requirements. Projects are carried out to achieve a given set of objectives, project management shall therefore involve planning, organization and controlling of resources to achieve these objective throughout the project cycle. That is through the process of project initiation, planning, execution, monitoring and control, and closing. Achievement of this set of objectives is referred to as the project success. Attaining project success forms the basis to understanding the broad knowledge on how to best to manage the project risks.

Project risk management strategy is rooted not only to the administrative internal control systems but it is also predisposed by the external factors a condition necessary for effective project risk management measures in the most projects not just construction (Speklé *et al*. 2007). This therefore impacts the organizations focus on project control which supports project requirements and governance to attain the success in project performance. Risk management strategies essentially impact the success of all project performance (Jin &Yean, 2015). This is so because effective risk management strategies and successful project performance has a positive relationship between the variables. This study therefore seeks to examine whether the failure of most of construction projects is attributed to lack of knowledge of how to mitigate key risks influencing the success of the projects with a focus on projects by the judiciary in Kenya.

METHODOLOGY

In review of organizational research methods, Zikmund, Babin et al., (2010) found that positivist paradigms are adopted for nearly all empirical organizational studies. This study, therefore, adopted positivism paradigm as it based its investigation on empirical organizational studies. Research design is the arrangement of conditions for collection and analysis of data in a manner that aims to combine relevance to research purpose with economy in the procedure (Kothari, 2004). This study used a descriptive survey design, where questionnaires were used to collect data. The ideal target population for this study consisted of the Judicial Officers and Top Management Staff who had the responsibility to align the Judiciary projects in the Narok County Courts. The target population for the study was 60 employees drawn from Narok county courts which comprised of Narok law courts and Kilgoris law court according to the Human Resource records, 2017. The unit of analysis was two courts found in Narok County and respondents were the employees who were responsible for the day to day running and management of projects at the respective courts. They included the Judges, Magistrates, Executive Officers, Procurement Officers and the Accountants. They were the ones who were very conversant with all issues of project management within the courts. The study used primary data gathered through structured questionnaires administered to all the categories of respondents responsible for the

construction projects at the Narok county law courts. The collected questionnaires were edited and cleaned for completeness in preparation for coding. Once coded, they were keyed into the Statistical Package for Social Sciences (SPSS version 21) for analysis.

RESULTS

Effects of risk avoidance on the success of construction projects

The objective of the study sought to establish effect of risk avoidance of the success of construction project. Respondents were required to give their opinion by indicating the extent to which they agreed or disagreed with the various statements. The results of the study were analysed descriptively using means and standard deviations in order to make deductions on how the respondent's respondent to various statements items describing the effect of the best option. The results were presented in table 1.

Table 1: Risk avoidance and success of construction projects

Risk Avoidance	Mean	Std. Deviation
Hazards, activities, and exposures that can negatively affect the project are being removed from the projects	3.58	1.288
Have as many threats to the project been deflected in Narok County Court?	3.51	1.160
Has vulnerabilities which pose threat to the project been minimized in Narok County Court	4.04	1.127
Has training and education on risk avoidance been undertaken to the stakeholders in the Narok County Court?	3.44	1.159

The results were presented using the mean value of the responses, where a mean value of less than 2.5 indicated that the statement items had very low influence on the dependent variable while a mean of more than 2.5 indicated that the statement had a strong effect on the dependent variable. The results showed that most respondents (Mean = 3.58 and a SD = 1.288) indicated that elimination of hazards, activities, and exposures that can negatively affected the project had been removed from the construction projects. This indicated that most projects were likely to be successful if the hazards and other negative exposures could be removed. This supported the claim by Pavodani &Tugnoli (2005), that the elements that create new risks and increase the impact and frequency of existing risks play an important part in the success of any project.

The study also showed that most of the respondents agreed to a great extent (Mean = 3.51) that many threats to the project had been deflected from the construction projects conducted by the law courts. This implied that by deflecting various threats that were likely to affect the construction projects helped to ensure that the projects were successful. This agreed with the claim of (Pavodani &Tugnoli, 2005) who indicated that the process of risk management becomes not only an instrument to prevent and manage the impact of damaging events on the organization but a force to see opportunities and hence ensure projects success.

The study also noted that majority of the respondents (Mean = 4.04) agreed that the Law courts in Narok had tried to minimise all vulnerabilities which pose threat to the project. This indicated that when threats to the project were minimized then the construction projects were likely to be a success. It was also noted that most respondents (Mean = 3.44) agreed that training and education on risk avoidance should be undertaken for all stakeholders involved in the implementation of the construction projects to ensure that the projects were a success. This implied that through

training the stakeholders were likely to effectively support the implementation process and hence enhanced the success of the project. This agreed with the findings of Snyder (2014), that project risk is an uncertain event or condition that, if it occurs, has a positive or negative effect on one or more project objectives such as scope, schedule or cost, these calls for strategies such as training to enhance the success of the projects. The results also supported the findings of Wagner & Bode (2009) who noted that avoidance and mitigation can be achieved through policy and procedure, training and education and technology implementations.

The study further sought to establish the relationship between the risk avoidance and project success by using Pearson's correlation analysis (r). This section was very important in establishing whether the relationship was significant or not significant at a P- value of < 0.05. The results were presented in Table 2.

Table 2: Pearson's Correlations analysis

		Risk Avoidance	Project Success
Risk Avoidance	Pearson Correlation	1	.118
	Sig. (2-tailed)		.438
	N	45	45
Project success	Pearson Correlation	.118	1
	Sig. (2-tailed)	.438	
	N	45	45

The results showed that majority of the respondents indicated that there was a weak correlation ($r = 0.118$) between risk avoidance and project success which was not significant since the P- value was > 0.05. This showed that though risk avoidance might be an important risk mitigating strategy in project management but its effect on the success of the project is not significant. This supported the findings of Rezakhani (2012) who stipulated that avoidance of risk only deflects the effect of the risk but it might not have a high effect on influencing the effect of the risk. This implied that there might not be a statistical relation between risk avoidance and the success of a project.

The study also sought to establish the magnitude of the relationship between risk avoidance and project success. This was done using the linear regression model as shown in table 3;

Table 3: Regression Model Summary

Model	R	R Square	Change Statistics				
			R Square Change	F Change	df1	df2	Sig. F Change
1	.118[a]	.014	.014	.612	1	43	.438

From the table the results showed that the relationship between risk avoidance and project success was explained by only a 1.4% change as shown by the (R – square of 0.014). The small F value (0.612) at the df (1,43) clearly showed that the model cannot be used in the prediction of project success. This implied that risk avoidance is a strategy in the mitigation of risk, but its effect in enhancing project success is very small. The null hypothesis that there is no significant relationship between risk avoidance and the success of project was accepted. This agreed with the findings of Kerzner, & Kerzner (2017) who noted that various risk management tools are available and fortunately, they are suitable for many industries, organization and projects.

DISCUSSION

Effect of risk avoidance and the success of construction projects

The relationship between the risk avoidance and project success was determined using Pearson's correlation analysis (r). The results showed that there was a weak correlation (r = 0.118) between risk avoidance and project success which was not significant since the P-value was > 0.05. This showed that though risk avoidance might be an important risk mitigating strategy in project management but its effect on the success of the project is not significant. Hence the hypothesis was accepted. The results also showed that the relationship between risk avoidance and project success can be explained by only a 1.4% change as shown by the (R – square of 0.014). The small F value (0.612) showed that the model cannot be used in the prediction of project success. This implied that risk avoidance is a strategy in the mitigation of risk, but its effect in enhancing project success is very small.

CONCLUSION

The study concluded that the use of various methods of risk avoidance like contingency planning, elaborate work plans for project activities, implementation of safety systems as well as regular inspections on project activities have got an influence on performance of projects but its effect in enhancing project success is very small.

RECOMMENDATIONS

The study recommended that though risk avoidance indicated a negative effect as a strategy in enhancing the success of a project. There is need to conduct further study in order to establish whether the nature of the project influenced the effectiveness of a risk management strategy on the success of the construction projects.

Areas for Further Research

This research found a weak correlation between the risk avoidance and the success of construction projects in the judiciary, which is contrary to the literature reviewed. There is therefore a need for further research on the effects of the applying risk avoidance as a strategy for mitigating risk on project success. There is therefore a need for further research on the evaluation and application of risk avoidance as a strategy for enhancing construction project success.

REFERENCES

Amin, M. E. (2005). *Social science research: Conception, methodology and analysis*. Makerere University.

Baccarini, D. (1996). The concept of project complexity—a review. *International journal of project management*, *14*(4), 201-204.

Bannerman, P. L. (2008). Risk and risk management in software projects: A reassessment. *Journal of Systems and Software*, *81*(12), 2118-2133.

Cleden, D. (2017). *Managing project uncertainty*. Routledge.

Cooper, D. R., & Schindler, P. S. (2006). *Marketing research*. New York: McGraw-Hill/Irwin.

Creswell, J. W. (2008). Qualitative, quantitative, and mixed methods approaches.

Darnall, R., & Preston, J. (2010). *Project management from simple to complex*. The Saylor Foundation.

Garcia-Morales, V. J., Matias-Reche, F., & Hurtado-Torres, N. (2008). Influence of transformational leadership on organizational innovation and performance depending on the level of organizational learning in the pharmaceutical sector. *Journal of Organizational Change Management*, *21*(2), 188-212.

Gidado, K. (2004). Enhancing the prime contractor's pre-construction planning. *Journal of Construction Research*, *5*(01), 87-106.

Graetz, F., Rimmer, M., Lawrence, A., & Smith, A. (2006). *Managing organisational change*. John Wiley & Sons.

Graetz, F., Rimmer, M., Lawrence, A., & Smith, A. (2006). *Managing organisational change*. John Wiley & Sons.

Hanna, A. S., Blasier, K., & Aoun, D. G. (2015). Risk misallocation on highway construction projects. *Journal of Legal Affairs and Dispute Resolution in Engineering and Construction*, *7*(4), 04515002.

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

Kinyua, E., Ogollah, K., & Mburu, D. K. (2015). Effect of risk management strategies on project performance of small and medium information communication technology enterprises in Nairobi, Kenya. *International Journal of Economics, Commerce and Management*, *3*(2), 1-30.

Kothari, C. R. (2004). *Research methodology: Methods and techniques*. New Age International.

Mboya, J. A. (2013). Competitive Strategies Adopted by the Jomo Kenyatta Foundation in Kenya. *Unpublished MBA project, University of Nairobi*.

Mugenda, A. G. (2008). Social science research: Theory and principles. *Nairobi: Applied*.

Mugenda, O. M., & Mugenda, A. G. AG (2008) Research Methods: Quantitative and Qualitative Approaches: Nairobi. *African Centre for Technology Studies*.

Mulholland, B., & Christian, J. (1999). Risk assessment in construction schedules. *Journal of construction engineering and management*, *125*(1), 8-15.

Mulholland, B., & Christian, J. (1999). Risk assessment in construction schedules. *Journal of construction engineering and management*, *125*(1), 8-15.

Munyoroku, S. M. (2014). Factors Influencing Implementation Of Enterprise Resource Planning In The Mobile Communications Sector In Kenya. *Unpublished MBA Project, University of Nairobi*.

Odimabo, O. O., & Oduoza, C. F. (2013). Risk assessment framework for building construction projects' in developing countries. *International Journal of Construction Engineering and Management*, *2*(5), 143-154.

Orodho, J. A. (2009). Elements of education and social science research methods. *Nairobi/Maseno*, 126-133.

Potts, J., Cunningham, S., Hartley, J., & Ormerod, P. (2008). Social network markets: a new definition of the creative industries. *Journal of cultural economics*, *32*(3), 167-185.

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

Ritchie, B., & Brindley, C. (2005). ICT adoption by SMEs: implications for relationships and management. *New technology, work and employment*, *20*(3), 205-217.

Ropel, M., & Gajewska, E. (2011). Risk Management Practices in a Construction Project–a case study.

Smith, A. (1776). An inquiry into the wealth of nations. *Strahan and Cadell, London*, 1-11.

Smith, A. C., & Humphries, C. E. (2004). Complexity theory as a practical management tool: A critical evaluation. *Organization Management Journal*, *1*(2), 91-106.

Spekle, R. F., Van Elten, H. J., & Kruis, A. M. (2007). Sourcing of internal auditing: An empirical study. *Management Accounting Research*, *18*(1), 102-124.

Wagner, S. M., & Bode, C. (2009). Dominant risks and risk management practices in supply chains. In *Supply chain risk*(pp. 271-290). Springer, Boston, MA.

Wallace, P., & Blumkin, M. (2007). Major Construction Projects: Improving Governance and Managing Risks.

Walliman, N. (2011). *Your research project: Designing and planning your work*. Sage Publications.

Zhao, X., Hwang, B. G., & Low, S. P. (2013). Developing fuzzy enterprise risk management maturity model for construction firms. *Journal of Construction Engineering and Management*, *139*(9), 1179-1189.

Zikmund, W. G., Babin, B. J., & Carr, J. C. dan Griffin, M.(2010). *Business research methods*.

Zwikael, O., & Ahn, M. (2011). The effectiveness of risk management: an analysis of project risk planning across industries and countries. *Risk Analysis: An International Journal*, *31*(1), 25-37.