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Determinants of successful implementation of donor-funded projects in Uganda

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1139

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Abstract

Purpose – The purpose of this paper is to examine, empirically the relationship between organizational rationality, knowledge management (KM), risk management and successful implementation of donor-funded projects in Uganda.

Design/methodology/approach – Data were obtained from 195 project managers of donor-funded projects both managed within government systems and those outside government using a questionnaire. Zero-order correlation analysis and hierarchical regression analysis were employed to analyze the data.

Findings – The paper has two major findings: all the predictor variables are positively and significantly related to successful project implementation; and the relationship is strong enough to cause a 23 percent (R^2) increase in the explanatory power in the presence of control variables.

Research limitations/implications – The study focussed on selected donor-funded projects in Uganda and this limited the generalization of the findings. Moreover, there was also limited availability of local empirical literature with respect to implementation and performance of donor-funded projects.

Practical implications – The results suggest that organizations that embrace organizational rationality, risk management and KM succeed in project implementation.

Originality/value – There are many studies that investigate the practices adopted by organizations that implement donor-funded projects, however, this is the first study to the authors' knowledge that examines the relationship between KM, rationality, risk management and successful implementation of donor-funded projects in Uganda.

Keywords Uganda, Knowledge management, Rationality, Donor funding, Project implementation

Paper type Research paper

Introduction

Developing countries have been the primary beneficiaries of donor-funded projects for more than half a century. Such projects have been useful to sectors such as public health, agriculture, education, social and community development and infrastructural development (Wood, 2005). In general, donor-funded projects are the backbone of substantial recorded strides in uplifting many developing countries out of dire social and developmental stagnation (Globerson and Zwikael, 2002). Despite the importance attached to donor-funded projects, their outputs in terms of quality, cost, time and stakeholder satisfaction remains the subject of abuse and debate in many developing countries (Azhar and Farouqi, 2008). Anecdotal evidence reveals that project organizations in developing countries are characterized by unpredictable and discontinuous personal interactions and incompatibility with organizational routines which points to the presence of implementation challenges (Prencipe and Tell, 2001; Schindler and Eppler, 2003), hence undesirable outcomes. In Uganda, many donor-funded projects that have been implemented show signs of irrationality and a deficient risk assessment and management mechanism. For example, the cost of the



“Northern By-pass Project” went up by more than 100 percent of the initial budgeted cost and delayed for more than two and a half years with quality deficiencies on road lighting and narrow lanes (Assedri and Ssepuuya, 2009).

Notably in the case of Uganda, the plans for the projects seem to ignore provisions for critical success factors (CSFs) which could provide strategies for propelling successful project implementation. Project implementation bodies, beneficiaries, government departments and other stakeholders such as local and district councils often conflict on goal congruence, certainty of goals, responsibilities and hierarchy. Project implementation challenges therefore continue to revolve around similarity, compatibility, consistency and fit of actions, values, skills and attitudes of project staff in pursuit of shared work place goals and interests (see Billsberry and Kristof-brown, 2013). The Northern Uganda Social Action Fund (NUSAF) project also reported conflicts between district councils and the line ministry on procurement-related activities and processes that resulted in financial losses (Assedri and Ssepuuya, 2009; World Bank, 1998a) thereby impacting implementation negatively.

Prerequisites for successful project implementation

Practitioners and researchers have not clearly identified a theoretical framework, recognizing all factors that could lead to the achievement of successful implementation of projects. This is partly supported by Belout and Gauvreau (2004) who note that studies attempting to predict the success of project implementation have tended to rely on the technical constructs of project implementation thereby ignoring the structural and organizational behavioral constructs. Nevertheless, there appears to a consensus among a number of practitioners and researchers that risk management, organizational rationality and knowledge management (KM) are prerequisites for successful project implementation (Bakker *et al.*, 2009; Besner and Hobbs, 2012; Sammon *et al.*, 2004; Turner, 2002; Zhou and Benton, 2007). For example, Slevin and Pinto (1986) argue that risk identification, assessment and management are linked to successful project implementation. The current piece of work brings on board all the above three CSFs and the main objective is to determine the individual and combined predictive power of the CSFs under investigation on project implementation success. The extant literature indicates that the above potential predictors of project implementation success have largely been investigated in isolation of each other. The current piece of work contributes through model specification which brings on board all the above three CSFs. The following section reviews, analyses and critiques the relevant literature on the study variables. In addition, the tested hypotheses are developed.

Literature review

This section presents a critical review of relevant literature on the relationship between project risk management, organizational rationality, KM and successful project implementation. It examines various ideas that support, evaluate and critic the cumulative knowledge growth in the subject. We then use it to develop hypotheses that are tested.

The relationship between risk management and successful project implementation

It seems logical to assume that risk management is more necessary in large, international, complex, innovative environments. The empirical results confirm that project management practice of risk management conforms to these assumptions; practitioners use more risk management in such contexts. The same had been assumed

concerning unpredictable environments, but findings by Besner and Hobbs (2012) show that this assumption requires verification. According to Besner and Hobbs (2012), risk management practice seems to be usable more in well-defined environments than in unpredictable environments such as Uganda. However, risk management relies on the identification of events having an impact on project objectives and on the measure of the probability and impact of these events. In this study, we argue that in highly uncertain context like Uganda, a situation in which it is difficult to predict future events, and also given the nature of all projects where implementation is designed to be in the future, risk becomes an important aspect determining success.

Succeeding in project implementation requires that one identifies the risk factors so that features of projects which have been identified as necessary to be achieved are not hampered in order to create excellent results. If the CSFs are not present or taken into consideration, one can largely expect that risks will be experienced which act as barriers to overall success outcomes (Rockart, 1979). Several authors have investigated project CSFs. The lists of CSFs presented include some regular items that are related to the level of project uncertainty. A superior definition of the project has been identified as a CSF through better identification of the project goals, mission, requirements or specifications (Besner and Hobbs, 2012; Martin, 1976; Morris and Hough, 1987; Pinto and Slevin, 1988). The relationship between uncertainty and failure (or between certainty and success) appears to be well established, but the association between risk management and success is not as clear (Besner and Hobbs, 2012). Bakker *et al.* (2009) present clear indications of the influence of individual project risk management activities on the success of IT projects. Zhou and Benton (2007) also find a clear link between these variables when analyzing construction projects. But Raz *et al.* (2002) and Bannerman (2008) did not find a clear relation between risk management and success. Risk professionals from the Project Management Institute (PMI) risk management SIG (Voetsch *et al.*, 2004), also found that despite the high visibility and favorable perception of risk management in their institutions, a significant gap exists between concern for risk management and resource allocation and staff training; a lot of people talk about risk, but not so many do something about it. The above discussion indicates that there is lack of consensus in the existing empirical works, hence the need for further investigation especially in uncertain contexts such as Uganda.

The relationship between rationality and successful project implementation

While organizational rationality refers to a collection and concerted construction of roles, norms, work order legitimations and controlling mechanisms at the work place into a common vision (Dissanayake, 2004); its role on project success has not been investigated adequately especially in situations of high uncertainty such as developing countries. Rationality emanates from the concepts of structuring roles, responsibilities and overall organizational hierarchy so that work processes are predictable as is the case with bureaucratization (Ritzer, 2008). The purpose of formal rationality and its connection with bureaucracy, lies in its disinterested application to every case (Gross *et al.*, 2013).

An influential work on rationality is by Ritzer (2008). He describes the rationality of an organization as McDonaldization, drawing his illustration from the fast food chain McDonald. McDonaldization means that each individual is not left with the task of finding the most favorable solution, but that the organization presents rules, standards and procedures to ensure that the work and decision making of the organization are carried out in a particular and rational way. According to Andersen *et al.* (2009),

McDonaldization might look as a rather particular definition of rationality, but that the concept is applicable to many types of organizations. Ritzer (2008) states that formal organizational rationality consists of four dimensions: efficiency, predictability, calculability and control. People who work in formal rational systems function more efficiently. They are trained to do the things in a particular manner. Predictability means that we know what we can expect. Calculability is about the spread of quantification, measurement and calculation through an organization. In a company of formal rationality, control is exerted over the employees. In this study, we adapt the concept of formal organizational rationality (Ritzer, 2008), but we may for the sake of convenience mainly refer to it as organizational rationality.

Finnish researchers (Arto *et al.*, 2008) have theoretically shown that the autonomy of a project (how independent the project is of base organization and stakeholders) affects its strategy and consequently the way it approaches its work. Turner (2002) reveals that successful project implementation is a result of setting clear goals, objectives and management and organizational construction. Simon *et al.* (1950), observed that in the broadest sense “efficiency” is “often used as a virtual synonym for rationality” (p. 490). This helps us connect this noble concept with project success. They further noted that the rational model views the organization as an instrument of efficiency, a deliberate and rational means for attaining known goals. However, Hao (2002) argues that bureaucratic government systems, standards and complex approval procedures have taken a risk common to projects in developing countries. In Uganda, most of the base project organizations are government units, departments or ministries and bureaucratization (Ritzer, 2008) might pose some challenges on project outcomes (see Prencipe and Tell, 2001; Schindler and Eppler, 2003). The current study would like to extend the view on what is determining how project management is carried out.

The relationship between KM and successful project implementation

Knowledge has become an area of rising interest in organizations and a source of competitive advantage which is acknowledged by many authors such as Eisenhardt and Santos (2002), cited in (Garavan and Carbery, 2007, p. 34). It was Nonaka (1991, p. 91) who said that “In an economy where the only certainty is uncertainty, the one sure source of lasting competitive advantage is knowledge.” In turn, when discussing KM, it is necessary to make the following assumptions regarding knowledge: “knowledge is worth managing, organizations benefit from Managing knowledge, knowledge can be managed” (Stewart *et al.*, 2000). Thus, Love *et al.* (2005, p. XIII) claimed that effective KM can be considered as an instrument in a project environment for reducing project time, increasing product quality and avoiding of making same mistakes. According to Besner and Hobbs (2012), for a project to succeed, it requires various CSFs. Mosse and Farrington (1998) noted the importance of social relationships, and the organizational politics of information distribution and its use in the context of development projects as being critical to project success and continuous learning in project organizations. Garvin (1993) prolonged the linkage by attaching KM to long-term learning when he contended that “a learning organization is one that is not only capable of creating, acquiring, and transferring knowledge, but also able to modify its behaviour to replicate new knowledge and insights.”

Bellonet (2000) has pointed out that the overarching goal of many project-based development agencies’ work requires KM which should not only contribute to internal efficiency but also to issues such as improved responsiveness, partnership, customer

satisfaction, project sustainability and policy influence. Baumann and Oden (1999) found that leverage from the knowledge resource base may come in the form of “pay for knowledge,” product and service improvement and enhancement. Therefore, knowledge has become a pivotal asset to be deployed in being creative, innovative and pursuing a qualitative competitive advantage (Kanter, 1995; Leonard-Barton, 1995; Kim and Mauborgne, 1999; Nonaka *et al.*, 2001). Sammon *et al.* (2004) argue that the degree to which project organizations prepare themselves in terms of knowledge and role construction for their projects’ implementation has a bearing on whether they encounter problems or not during implementation and ultimately, whether they achieve any of the benefits they sought to achieve. It is thus no accident that such a resourceful initiative is needed for organizational strategy and successful project implementation.

However, drawing from the extant literature, there appears to be little empirical work that investigates a relationship between KM and successful implementation of projects especially in developing countries such as Uganda. By and large, theoretical literature dealing with concepts and definitions is what appears to be dominant. Very frequently projects in developing countries fail or are challenged due to their incapability to get the right knowledge to the right people at the right time, and help people on the project share and put information into action in ways, which improve project performance. Previous studies have not clearly identified nor demonstrated the relationship between the management of projects and the use of KM processes (Al-Zayyat *et al.*, 2009). Thus, this study embarks on investigating the link between KM and project implementation outcomes using evidences from Sub-Saharan Africa; a case of Uganda.

The proposed model

For the purpose of this study, thus, it is imperative to examine the relationship between successful project implementation and the three prerequisites; risk management, organizational rationality and KM. It proposes to examine three sets of relationships:

- (1) how risk management affects successful implementation of donor-funded projects in Uganda;
- (2) how rationality affects successful implementation of donor-funded projects in Uganda;
- (3) how KM affects successful implementation of donor-funded projects in Uganda; and
- (4) how the combination of risk management, rationality and KM affect successful implementation of donor-funded projects in Uganda.

Based on these four relationships, a model in Figure 1 is proposed:

This model envisages that risk management, rationality and KM directly influence successful implementation of donor-funded projects in Uganda.

Hypotheses

The main objective of this study is to identify the relationships between successful implementation of donor-funded projects in Uganda and the three prerequisites: risk management, rationality and KM. As a result, four hypotheses have been developed based on the four relationships identified in the previous section:

- H1.* There is a positive and a significant relationship between risk management and successful implementation of donor-funded projects in Uganda.

- H2. Organizational rationality is positively related to the successful implementation of donor-funded projects in Uganda.
- H3. KM is positively related to and predict successful implementation of donor-funded projects in Uganda.
- H4. Risk management, rationality and KM significantly explain the variance in the successful implementation of donor-funded projects in Uganda.

The following section presents the methods and approaches used to carry out the study.

Methodology

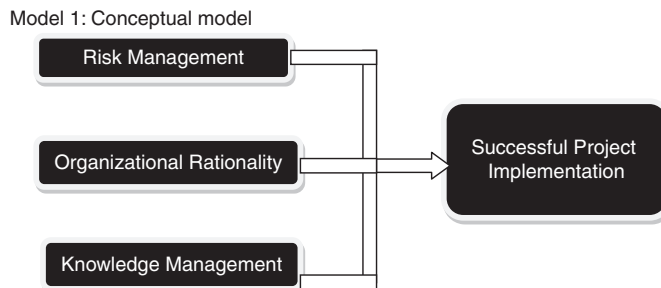
Research design, population and sample size

The study adopted a cross-sectional correlation survey design to test the study hypotheses. According to Burns and Grove (2007) the purpose is to provide control over the study to maximize the validity of the findings. Burns and Grove (2009) further state that non-experimental research designs, such as, descriptive and correlational designs, should be utilized in research where phenomena are studied in their natural environment without any manipulation of the variables. Brink (2006) observes that the purpose of non-experimental research is to describe phenomena, and to examine and describe relationships among the variables. In this respect, we used a population of 168 donor-funded projects obtained from the Ministry of Finance and Economic Development and its development partners' submission from the Foreign-Aid Liaison Department to establish the relationship between KM, organizational rationality, risk management and project implementation success. Given the small number of projects, the survey was based on a census. The unit of analysis was the individual project, whose individual senior members of staff and key beneficiaries formed the unit of enquiry. Though a maximum of five senior staff and key beneficiaries were targeted per project, the number of respondents from each project ranged between three and six. To address variations in project responses, a minimum of three responses were considered for analysis. The decision to accept three respondents per project was based on earlier studies such as Baer and Freese (2003) and Ngoma (2009) who used a minimum of three respondents per firm. From a population of 168 donor-funded projects, 105 usable questionnaire copies were returned implying a response rate of 62.5 percent.

Measurement of variables, reliability and validity

For the empirical study a questionnaire was prepared with operationalization of the concepts of KM, organizational rationality, risk management and project

Figure 1.
A model of the relationships between risk management, rationality, knowledge management and successful project implementation



implementation success. We measured KM based on a tool developed by Perez-Soltero *et al.* (2013). Questions that tap aspects of internal and external acquisition of knowledge, knowledge distribution, knowledge interpretation and organizational memory were adapted. Project risk management was measured based on a tool adapted from Association of Project Managers (2000). The questionnaire was validated through expert interviews and a panel of practitioners. For organizational rationality we use the current operationalization by Ritzer (2008). Project implementation success was measured based on items adapted from Lipovetsky *et al.* (1997), Lim and Mohamed (1999), Zwikael and Sadeh (2007), Kerzner (2006) and Voetsch *et al.* (2004) and modified to suit the study context. The results are measured by a Likert scale from 1 to 5, where 1 is the least rational alternative and 5 is the most rational alternative.

Validity of an instrument signifies that it accurately measures the concept in question; reliability reflects the consistency of the instrument in measuring the concept it is supposed to measure (De Vos *et al.*, 2005). A range of measures were taken to ensure the reliability, as well as the content validity. First, we tested for common methods bias. Consistent with Podsakoff *et al.* (2012), Hamman's one factor test yielded 29 factors accounting for 80.27 percent of the variance. The first factor accounted for 10.69 percent – meaning it did not account for more than 50 percent of the variance. This implies that our data were devoid of problems of common methods bias (Podsakoff *et al.*, 2003, 2012). Second, we tested for reliability. The reliability for all the variables as measured by Cronbach's α was above 0.7. Sekaran (2000) and Nunnally (1978) affirm that values close to 0.7 or above 0.7 are acceptable. Cronbach's α for KM was 0.903, for organizational rationality was 0.877, for risk management was 0.869 and for project implementation success 0.886.

Factor analysis was performed to identify the patterns in data and to compress data to a controllable level (Field, 2005; Hair *et al.*, 1998). Using principal component analysis, only those factors with an eigen value greater than 1 were retained (Guttman-Kaiser rule). The Kaiser-Meyer-Olkin (KMO) and Bartlett's (1954) test of sampling adequacy was computed to ensure that factor analysis yielded distinct and reliable factors (Kaiser, 1974). The following criteria were used to assess sampling adequacy (Kaiser, 1974): 0.90 = marvelous; 0.80 = meritorious; 0.70 = middling; ≤ 0.60 = mediocre; ≤ 0.50 = miserable and below 0.50, unacceptable. Besides, only items with communalities of 0.60 and above were retained. All the variables had determinants of matrix above 0.00001 and all this suggested there was no multicollinearity problem (Field, 2005) or singularity between variables (Kulscar, 2010). Bartlett's test of sphericity was found to be significant (see Field, 2005). In terms of KMO, the variables fared as follows: KM = 0.812; organizational rationality = 0.774, risk management = 0.834 and project implementation success = 0.8785. These results indicate that the variables under study were fit for exploratory factor analysis.

From the exploratory factor analysis KM yielded five factors (knowledge development, knowledge sharing, organizational memory, information distribution and continuous learning) which accounted for 61.70 percent of the variance; organizational rationality had three factors (rational behavior, goal alignment and rational structuring) that accounted for 58.24 percent of its variance; risk management had two factors (risk assessment and risk management practices) that resulted into 54.33 percent of its variance and project implementation success had three factors (quality, cost reduction and satisfaction) that accounted for 55.31 percent of its variance.

Model development and specification

We developed a model to guide the study. The model shows the relationship between organizational rationality, KM, project risk management and project implementation success. Here under we specify the model adopted in this study as $PIS = a + bKM + cOR + dPR + e$; where “PIS” is project implementation Success, “KM” is knowledge management, “OR” is organizational rationality, “PR” is project risk management, “a” is the constant, “b,” “c” and “d” are coefficients of the independent variables and “e” is the error term associated with the coefficients of the regression equation.

Results

In this section, we present the results and findings of our study.

Sample characteristics

Data from 105 projects were received, accounting for 62.5 percent response rate. As shown in Table I, majority of the projects 38.7 percent (41) had been in existence for over ten years and only 10.4 percent (11) had existed for less than two years. The rest of the projects had been in existence for between three and ten years. The majority of the projects 42 percent (45), were from the health sector, followed by social development 24.5 percent (26) with the construction sector having only three projects (2.8 percent). 29.2 percent (31) of the projects employed over 100 people with the smallest projects 4.7 percent (5) employing below ten people. As for the source of funding, 68.9 percent (73) were donor funded directly; 18.9 percent (20) donor funded through government and only 12.3 percent (13) solely funded by government.

		Frequency	Percent
Age of the project	Less than 2 years	11	10.4
	3-6 years	28	26.4
	6-10 years	26	24.5
	Over 10 years	41	38.7
	Total	106	100.0
Category of project	Social development	26	24.5
	Health	45	42.5
	Agriculture	9	8.5
	Construction	3	2.8
	Education	7	6.6
	Poverty eradication	16	15.1
	Total	106	100.0
Number of employees	Less than 10	5	4.7
	11-25	13	12.3
	26-50	28	26.4
	51-100	29	27.4
	Over 100	31	29.2
Source of funding	Total	106	100.0
	Donor through gov't	20	18.9
	Donor directly	73	68.9
	Gov't	13	12.3
	Total	106	100.0

Table I.
Population
characteristics

Correlation analysis

To establish the strength and direction of the relationship between the variables in the study, correlation analysis was performed. Results support the hypothesized relationships *H1*, *H2* and *H3*. There was a significant positive correlation between KM and project implementation success ($r = 0.335, p \leq 0.01$); organizational rationality and project implementation success ($r = 0.308, p \leq 0.01$) and; project risk management and project implementation success ($r = 0.414, p \leq 0.01$). The corresponding average responses for the constructs were: KM (mean = 3.87, SD = 0.618), organizational rationality (mean = 3.51, SD = 0.733), project risk management practices (mean = 3.65, SD = 0.677) and project implementation success (mean = 3.61, SD = 0.670). The mean scores ranged between 3.51 and 3.87 and the standard deviations were in the range of 0.618 and 0.965. Since the standard deviations were small compared to the mean scores, this suggests that the computed averages represent the observed data. Put differently, the calculated means are a good replica of the real population (Field, 2006) (see Table II).

Regression analysis

To test the model specified above, hierarchical regression analysis was carried out. First, the regression analyses were performed to evaluate, the effect each of the independent variables has on project success and second, the combined effect of the three independent variables on the criterion variable (see Table III for details). Control variables of the project organization age; number of employees in the project organization; source of funding for the project; and category of project were entered in model 1. Consistent with *H3*, Table II reveals that there is a significant regression between KM and project implementation success ($\beta = 0.34, R^2 = 0.14, p \leq 0.001$) accounting for 14 percent of the variance. This means that a one unit increase in KM increases project implementation success by 0.34 standard deviations. Additionally, the influence of organizational rationality on project implementation success is positive accounting for 17.5 percent of the variance ($\beta = 0.20, R^2 = 0.16, p \leq 0.01$); rendering support for *H2*. This implies that a one unit increase in organizational rationality increases project implementation success by 0.20 standard deviations. Furthermore, from Table II, the influence of project risk management on project implementation success is positive ($\beta = 0.27, R^2 = 0.23, p \geq 0.01$), implying support for *H1*. This means that one unit increase in project risk management increases project implementation success by 0.23 standard deviations. Overall, a combination of KM, organizational rationality and risk management significantly explains 23 percent of the variance in project implementation success in Uganda, hence supporting *H4*. Lastly, the overall model was significant at 1 percent and can be stated as $PIS = 3.45 + 0.34KM + 0.20OR + 0.27PR$; where PIS is the project implementation success, KM the knowledge management, OR the organizational rationality and PR the project risk management.

	Mean	SD	Knowledge management	Organizational rationality	Risk management practices	Project implementation
Knowledge management	3.87	0.618	1			
Organizational rationality	3.51	0.733	0.318**	1		
Risk management practices	3.65	0.677	0.503**	0.362**	1	
Project implementation success	3.61	0.670	0.335**	0.308**	0.414**	1

Note: **Correlation is significant at the 0.01 level (two-tailed)

Table II.
Correlational analysis

	Model 1		Model 2		Model 3		Model 4	
	β	SE	β	SE	β	SE	β	SE
Constant	3.45***	0.48	1.94**	0.62	1.54*	0.64	1.36*	0.63
Age of the project organization	0.07	0.09	0.09	0.09	0.08	0.09	0.07	0.09
Number of employees in the project organization	-0.09	0.06	-0.11	0.05	-0.08	0.05	-0.08	0.05
Source of funding for the project	0.14	0.12	0.10	0.11	0.08	0.11	0.06	0.11
Category of project	-0.04	0.28	0.01	0.27	0.03	0.27	0.02	0.26
Knowledge management			0.337***	0.10	0.28	0.11	0.16	0.12
Organizational rationality					0.20**	0.09	0.14	0.09
Project risk management practices							0.27**	0.11
R	0.18		0.37		0.42		0.48	
R^2	0.03		0.14		0.18		0.23	
Adjusted R^2	-0.01		0.10		0.13		0.18	
ΔR^2	0.03		0.11		0.04		0.051	
F change	0.80		12.69		4.26		6.51	
Sig. F change	0.53		0.00		0.04		0.01	
df	(4.101) = 105		(5.100) = 105		(6.99) = 105		(7.98) = 105	
F	0.80		3.25		3.51		4.05	
Sig.	0.53		0.01		0.00		0.00	
n	105		105		105		105	

Table III.

Regression analysis

Note: *, **, ***Regressions are significant at the 0.05, 0.01 and 0.001 levels (two-tailed), respectively

Discussion of findings and implications

In *H1*, the study sought to test whether risk management has a significant impact on project implementation success. Indeed the results supported this view since project risk management was found to be significant predictor of project implementation success. From this study; we can rightly argue that attempts by project implementers to assess risk and act accordingly will be reciprocated with positive project outcomes. The ability of the project implementers to manage such risks as part of their daily practices will reduce cost and at the same time increase the level of satisfaction of the project stakeholders. The finding are in line with Cooper *et al.* (2005), Olson (2008), PMI (2004), Williams (1995) and Perminova *et al.* (2007) who contend that project risk management has an effect on project implementation success indicators, such as cost, time, scope or quality.

Accordingly, project organizations can profit from risk management effort such as assessing risk and managing risk through reduced cost, quality enhancement, time delivery and stakeholder satisfaction. Project managers should make sure that the risk management role in the organization implements these practices, develops supportive methodologies and systems and inspires people to partake in them.

H2 sought to establish whether organizational rationality was significantly related to project implementation success. Indeed this study hypothesis was supported implying that the more rational the project are, the more the chances of project implementation success. This finding is supported by the work of Eskil *et al.* (1999) who revealed that organizational rationality makes work processes predictable and achievable thereby resulting into improved outputs. Rationality helps in assessing and managing anticipated risks in projects thereby positively affecting project success. Irrationality in form of unclear responsibility, complex approval procedures, bureaucratic government systems and long project approval procedure that do not

compliment the timeliness nature of projects has denied stakeholders of the dire needed project outputs.

From this study, we can infer that structuring roles, responsibilities and the alignment of the organizational hierarchy to project activities goes a long way in reducing cost, committing to deadlines and ensuring quality of services in project environments. This study demonstrates that rational structures, rational behavior and goal alignment in the project organization improves the chances of project implantation success. This study displays that projects that take rational behaviors are more likely to reduce costs. Also projects that align their goals properly with their strategies reap satisfaction with the project from their members at the end. Furthermore well structured projects are more likely to result into quality performance at the end of such projects.

H3 sought to establish whether KM was related to project implementation success. From the regression analysis results, this was supported. The results of this study suggest that project organizations can utilize KM in order to achieve project implementation success. The knowledge accumulated in many areas of the project and the project cycle impacts on outcomes of specific projects. These findings are in agreement with Argyris and Schön (1978) and Pedlar *et al.* (1996) who assert that organizations that leverage knowledge tend to eliminate a lot of uncertainty and thus enhance chances of success. The findings are also supported by Wateridge (1995) and Atkinson (1999) whose work revealed that project success improves with improvement in continuous knowledge acquisition, distribution and usage within the project.

This study demonstrates that when participants in a project develop knowledge of the project, this in turn impacts on the quality output of the project. The ability and practice of project participants to share and distribute knowledge acquired translates into satisfaction that indeed the project is doing what is expected of it. Through sharing knowledge, participants in the project continuously learn and eventually they are able to do their work efficiently resulting into cost reduction. Knowledge is necessary during project design, implementation and sign off. Project organizations can benefit from knowledge initiatives such as promoting “lessons learned” repositories and individual or group learning through discussions in project environments. This is likely to reduce cost, enhance quality, time delivery and stakeholder satisfaction. Project managers should make sure that the KM function in the organization operates these processes, develops supportive methodologies and systems and motivate people to participate in them.

Conclusion

In order to determine the possible required changes to improve project implementation success, it was necessary to uncover the forces that drive the behavior in individual projects and the consequent outcomes such as improved quality, satisfaction and timeliness. We can therefore derive the following conclusions from the findings and discussion in this study. The results suggest a positive and significant relationship between each of the predictor variables, that is, KM, organizational rationality, risk management and project implementation success. These results are important because they provide evidence of the aggregate explanatory power of KM, organizational rationality and risk management for the endogenous variable project implementation success. The findings discussed on the association between KM, organizational rationality and risk management and; project implementation success lead to the conclusion that successful project implementation can be enhanced through appropriate KM, organizational rationality and risk management. Thus, KM, organizational rationality

and risk management act as an impetus for successful project implementation. Accordingly, the learning point is that KM, organizational rationality and risk management are very fundamental in influencing project implementation success. This is true because, project success is shaped by the ability of the project to manage knowledge, rationality and risk-related issues.

Limitations of this study

The study focussed on the success of selected donor-funded projects in Uganda. This limited the generalization of the findings from the study. Second, given the limited time period in which the study was carried out, this study may not have given a clear picture of what it takes for government to consider these variables in donor-funded projects. Third, there was also limited availability of local empirical literature with respect to success of donor-funded projects.

Areas for further research

The results of the study highlight a need to better understand ethical dimensions in KM, risk management and rationality that make successful donor-funded projects do it right. The study at hand only highlighted issues related to structural and management issues. It is also important to further investigate the contribution the culture of the organization (project) in helping or impeding project implementation. Further studies should also investigate whether perceptual behavioral and psychological aspects of project managers affect project implementation. Future scholars could investigate the precursors of organizational rationality, KM and risk management, which have proved to be significant predictors of project implementation success. Also a longitudinal study could be undertaken to establish whether the views of people on project implementation success remain the same after a longer period of time.

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