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Exploring formal information technology evaluation practices in African firms

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Despite its universal appeal, little has been done in the way of empirical research to probe into the role of formal information technology (IT) investment evaluation practices and its influence on IT governance and performance in African firms. A preliminary survey of 74 firms from South Africa, Nigeria and Zimbabwe, reveal that while firms are generally aware of formal IT investment appraisal techniques and IT value realisation prescriptions, relatively less formality is actually applied to appraising, managing and realising IT benefits. This research unveils many issues in exploiting IT benefits, with a majority of firms acknowledging substantial targeted benefits losses. Addressing how IT investments can be managed more effectively using formal investment appraisal and benefits management practices, to predictably realise intended payoffs remains a top concern for African firms and the continent's IT researchers.

Key words: Information technology (IT), IT governance, IT investment appraisal, IT benefits management, IT performance.

INTRODUCTION

Firms today are increasingly being held to account for the resources they are investing in information technology (IT) initiatives. In the public sector, African ministries of finance/treasuries are showing a growing interest in IT programme performance. The promise of IS/IT in government is to provide new electronic services which require sizeable investments in information and communication technology and concomitant organisational change, to realise benefits. However, the benefits gained from e-government investments are often disproportional to the scale of these investments. The view of finance and treasury functions today are more stringent, asserting that any initiative absorbing public funds and resources that fail to yield planned benefits, should be ruthlessly abandoned, cancelled or re-defined. There is now a stronger emphasis on continuity within the IT benefits management process, requiring that the process transcends the closure of the IT programme, and implying that there will be many stakeholders involved in working to increase benefits realisation and deal with any dis-benefits. After all, failure to do so can be construed as abuse of public resources, something government agencies can ill-afford.

Similarly, in the private sector, business leaders today are also faced with increasing regulation, more intense stakeholder scrutiny, and greater accountability towards stakeholders. The King Committee on Governance, draft code of governance principles for South Africa (Institute of Directors in Southern Africa, 2009) asserts that it is the Board's responsibility to ensure "value delivery: concentrating on optimising expenditure and proving the value of IT". More specifically, the report insists that organisations adopt a management framework for IT governance based on a common approach, such as the Control Objectives for Information Technology (COBIT). COBIT strongly recommends that there are clear accountabilities for the realisation of benefits and that the IS/IT department adopt tactical plans to ensure that benefits are effectively

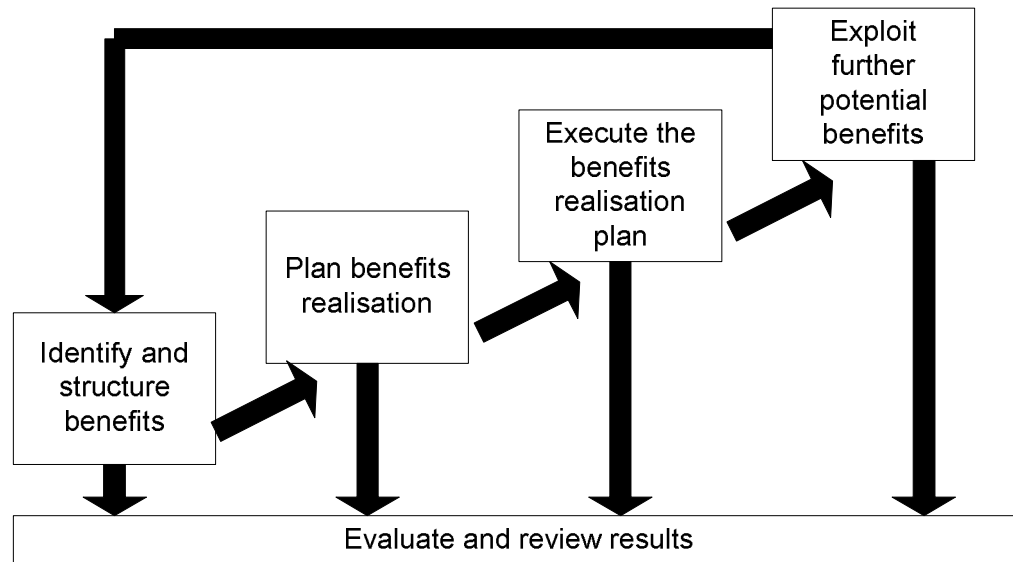*Corresponding author. E-mail: Rennie.Naidoo@up.ac.za.

Figure 1. The cranfield process model of benefits management (Ward and Griffiths, 1996).

monitored and managed (ITGI, 2005). Given that IS/IT projects and programmes are often the strategic vehicle used to implement business strategy, it is not surprising that the focus on benefits realisation has increased in the last few years. In today's recessionary environment, the focus has logically shifted to the 'squeezing' of business benefits. Despite increasing IT investments, the current economic context is bringing IT evaluation practices sharply into focus.

There have been a number of studies conducted to determine whether IT evaluation approaches are being adopted effectively by firms in other parts of the globe (Ward et al., 1996; Lin and Pervan, 2003; Santos, 2003). These studies have confirmed concerns that IT evaluation approaches are not being adequately integrated into how these investments are governed. Despite international concerns about corporate governance in Africa in general, and given anecdotal evidence of increasing fraud, corruption and maladministration, there is an urgent need for clear decision and accountability frameworks for IT investments. However, few of these studies have focused exclusively on developing country contexts in Africa (Sutherland, 1994; Ssewanyana, 2009). It therefore remains unclear, what if any, are the gaps between the theory of IT evaluation and practice, in countries in Africa.

Conceptual framework

The process model school in IS evaluation argues that successful IT value realisation follows from adopting the appropriate procedure. The process model of benefits management developed by Cranfield research program

offers several guidelines on best practice in IT benefits management. Ward and Elvin (1999) define benefits management as the process of organising and managing IT investment uncertainties and risks such that potential benefits arising from the use of IT are actually realised. The process that they advocate is largely predefined suggesting a universal appeal for this approach. Figure 1 depicts their life-cycle approach for attaining beneficial returns on IT investments. A comprehensive benefits management approach comprises of a range of management activities that seeks to realise the envisaged benefits of an IT investment. As opposed to discrete activities at a point in time in a project lifecycle, process models propose a lifecycle approach to managing benefits stretching beyond the conventional project lifecycle, to include the expected change resulting from the investment in IT. By incorporating an organisational change perspective, process models also enables one to recognise the full cost of the business change.

Phases in the IT value realization process

A lifecycle benefits management approach potentially enables managers to build a more realistic business case, with a richer view of both costs and benefits:

1. The first phase in the benefits management lifecycle focuses on identifying and structuring benefits. During this phase, the project's proposed benefits and disbenefits are identified including suitable measures for each benefit. The relevant managers whose activities are affected by the system agree to the benefits list.
2. During the second phase, planning benefits realisation

receives priority. In this phase, the business owner responsible for the benefits delivery and the schedule of benefits are identified. A more comprehensive decision of the project's viability is made, as the required business changes required to realise the benefits are planned for, and assessed. Funding approval is granted only once the required benefits realisation plan is produced.

3. Phase 3 deals with the execution of the benefits realisation plan. During this phase, the implementation of the necessary business changes is carried out. The progress of the activities and deliverables consists of two plans: the project plan for the systems development and the benefits realisation plan. Both are continually monitored since systems development issues may arise that may prevent the delivery of some or all of the benefits, and new benefits may emerge. The plans are revised accordingly as issues emerge.

4. In phase 4, the results are evaluated and reviewed. The project's business measures are evaluated once the IS/IT and business changes are fully implemented. 'Before and after measures' provide an explicit indication whether the benefits of the IT investment have been realised.

Challenges in adopting formal IS evaluation practices

While the prescriptions outlined previously may appear reasonable, it is clear that a comprehensive benefits management process can be complex, time consuming and expensive to implement (Brown, 2005). Such an approach requires a high degree of commitment from a relatively large team of competent IT managers (Ward and Murray, 1997). The problems in benefits management also include the lack of practitioner knowledge of formal benefits realisation concepts and the poor adoption of these processes. Too often, IS/IT functions and their business counterparts have a limited view of the benefits of IT, often viewing IS/IT projects as technical, or viewing benefits as the delivery of functionality (Ward and Murray, 1997), or limiting their evaluation to financial returns and ignoring other outcomes that are potential sources of value. For instance, some researchers found that insufficient attention had been paid to intangible benefits when investment decisions were made (Ashurst et al., 2008; Remenyi, 2000). Practitioners also find it difficult to assess benefits after project implementation, largely because of the effort and costs involved. Post evaluation processes are also often ignored because managers also perceive that the project has delivered according to plan (Norris, 1996). Another challenge for managers is that benefits are temporally dynamic with some ending and new benefits continually emerging (Remenyi, 2000).

Furthermore, some benefits are often unexpected in IT projects. Sometimes, the immediate results of an IT investment are rarely the expected benefits, and those benefits that are planned do not occur where and when they are planned. Another concern is that conventional project management practices are too narrowly defined specifically for the effective delivery of benefits, and firms generally have limited guidance, processes and ability to manage the changes required to exploit potential IS/IT benefits. Conventional project management measures of time, cost and quality which measure the effects of the implementation of the technology itself can be somewhat superficial, as most researchers agree that value is extracted from the appropriation and use of IS/IT. Furthermore, some researchers found that firms are not structured to play both the player and referee roles - there is no clear definition of who in the organisation is the watchdog for benefits delivery. Nevertheless, a number of academics insist that the hallmark of organisations that are able to successfully create value through IS/IT projects depends on a formal benefits management process (Peppard et al., 2007). More recently, other researchers have been suggesting that these formal methods often have a limited perspective of human, social and political aspects which may account for their inconsistent application in many firms (Land, 2000). Further, the empirical research methodology used to probe into these debates around formal benefits management practices and its influence on IS/IT project performance in African firms, are discussed.

In summary, while approaches to IT evaluation and benefits realisation such as the Cranfield Process model have been proposed and utilised in practice, the reported use of such processes is fairly low. Since little work in investigating these practices has been reported in Africa, a survey of large African organisations was initiated.

Research objective and questions

Some critical questions about IS evaluation practices in Africa remain unanswered to date. Are firms adopting formal policy or procedures for creating business cases as part of investment approval activities? Do firms clearly define individual accountability for realising benefits from IT investments? Do firms formally evaluate benefits throughout the investment life cycle and beyond? Are more formal benefits management processes, necessarily better processes? If that is the case, why have not the vast majority of firms established formal benefits management practices as recent research seem to suggest? While this paper does not report definitive research relating to these questions, it does report on some interesting preliminary data that may shed light on these questions.

RESEARCH METHODOLOGY

A quantitative survey was undertaken during March to June 2005, as part of a larger global research programme on IT investment by a major global IT advisory firm. Since IT value and benefits management formality specifically in Africa is an emerging field, the

findings of the survey are still particularly timely. Given the emergent nature of the field and the paucity of research in this area, it is perhaps even more vital to learn from the recent past to inform the future. The research adopted what may be regarded as a blend of purposive yet convenient, pragmatic or opportunistic approach to conducting the fieldwork. This approach is becoming more and more acceptable among academic researchers (Buchanan and Bryman, 2007). Therefore, a convenience sampling approach was used to target medium to large African firms. The study was purposive in the manner in which suitable respondents who were knowledgeable about the topic were selected. The firms included in the survey were either existing clients or targeted clients of the major global IT advisory firm. The questionnaire which is partly based on Ward et al. (1996), covered many aspects of IS/IT benefits management using a mix of ordinal scale, nominal scale, and open-ended questions. The interviews lasted between 45 to 90 min, and included at least one IT professional (in some cases two) from the IT advisory firm. Given the scale of the survey given its regional focus, approximately 30 fully briefed managers were used to conduct the interviews. To guard against value bias, interviewers were given a more detailed explanatory document that provided additional guidance to the interview questions. Data analysis for this study was performed using SPSS. A number of general descriptive methods and tools were used to analyse response patterns. Cross tabs were also used to compare the values of different variables. Since the interviews were conducted face to face, very few problems were encountered with the coding of the data. There was only one response that had a missing item for the question related to the type of benefits management process formality. Instead of deleting the response in its entirety, a mean replacement score was used since the rest of the response was useful for analysis. In any event, this single amendment did not make any significant difference to the final result.

EMPIRICAL RESULTS

Characteristics of responding organizations

Table 1 provides background information collected from the responding firms. The participating firms were from three African countries – South Africa, Zimbabwe, and Nigeria. More than 80% of the responding organizations were from South Africa. Thus, this study's sample is more indicative of the South African situation. More than half of the firm's IS/IT projects were less than $ 10 million and more than 40% of the responding firms spending on IT projects exceeded $ 10 million dollars per annum. Given the revenue figures, most of these organizations can be categorized as medium to large organizations. Moreover, close to 65% of the respondents interviewed were in Chief Technology Officer, Chief Information Officer or equivalent Head of Information Technology job positions.

Formality of the IT evaluation process for different types of benefits

The literature asserts that IT investments should be articulated as benefits in a business case. Respondents who were asked about the degree to which there is a formal policy or procedure for creating business cases as part of project approval activities, revealed a reasonably

high adoption rate (85.1%, n=63). While 53.1% of firms who claim to have a formal business cases process, reported always using a business case, many others (46.9%) used a business case selectively such as for strategic projects that exceeded a certain value or that had some other significant impact on the organisation. Similarly, a majority of the responding firms (82.4%, n =61) also reported a high adoption rate for some form of a formal benefits management process. However, responses to further questions identified that, of those who had adopted a formal benefits management approach, only a minority of respondents (31.1%) reported stringently enforcing a formal process for identifying and monitoring benefits for their IT investments, while the remaining 68.9% reported adopting these processes in an ad hoc manner, or without any stringent enforcement. This lack of formality for the benefits management activity is consistent with the findings from Ward and Elvin (1999) and Lin and Pervan (2003). While most firms did not make this process a compulsory requirement, only 17.6% of the responding firms reported that they had failed to adopt a benefits management process. Many firms identified the more tangible, financial benefits involving cost reduction/avoidance (88.5%), capital saving (59.0%) and lastly, revenue enhancement (65.6%). Among the more intangible non-financial benefits, many firms claimed that they were identifying and monitoring technological and organizational improvements (78.7%), process improvements (78.7%) and customer related improvements (70.3%). Despite the recognition given to intangible benefits, it is not clear what techniques were being applied to identify and monitor intangible benefits (Irani and Love, 2001) as only 21.6% of firms reported having a stringent process for clearly separating project outcomes from business as usual outcomes, and rigorously applying a baseline for the reporting of benefits.

Accountability and links to formal performance management plans

The literature suggests that organizations should clearly define individual accountability for realising benefits and include integrating these proposed benefits with operational plans and budgets (Peppard et al., 2007; Jurison, 1996). As early as the funding phase, a number of researchers recommend that the business unit responsible for extracting value from the investment should be identified and that the operational management sign off and drive the fruition of the proposed benefits. Surprisingly, when probing only those organizations (n=61) that claimed to have a benefits management process, an overwhelming majority of respondents (51.9%) revealed that either the project sponsor or project manager (25.00%) was ultimately accountable for delivering on the expected benefits given that most projects are disbanded once the technology has been implemented. Even more irregular, was that only a

Table 1. Background information of the responding organisations.

Variable	Number	Percentage
Countries		
South Africa	61	82.43
Nigeria	7	9.46
Zimbabwe	6	8.11
Total	74	100
Industry sector		
Consumer and industrial markets	19	25.68
Energy and natural resources	6	8.11
Government	18	24.32
Financial services	24	32.43
Information, communication and entertainment	7	9.46
Total	74	100
Annual Gross Revenue		
>$1 Billion	9	12.16
<$500M < $1 Billion	24	32.43
<$100M < $250M	17	22.97
>$25M < $50M	24	32.43
Total	74	100
Annual IS/IT project spend		
<$ 1 < 10 M	46	62.16
<$ 50 < 100 M	14	18.92
>$ 100 < 500 M	14	18.92
Total	74	100
Job title		
Chief Technology Officer, Chief Information Officer or equivalent Head of Information Technology	48	64.86
Senior Management	18	24.32
Business Unit Head	3	4.05
Chief Operating Officer	2	2.70
Chief Financial Officer / Financial Controller	3	4.05
Total	74	100

M = million.

minority of organizations (19.2%) reported that the Business Unit Head who is ultimately the recipient of the benefits was accountable for delivering on the expected benefits, followed by the CFO/Financial Controller/Head of Finance (1.9%), and even 1 organization (1.9%) assigning no real responsibility for the accruing of benefits despite claiming to have a benefits management process. Furthermore, a noteworthy proportion (36.5%) of organizations never, rarely or only sometimes, linked the delivery of expected benefits to formal performance management plans or employee incentive programs. While more than half of the organizations (58.1%) reported that either the CEO or the board is responsible for approving business cases, recent governance recommendations suggest that the role of the board and senior management should not be limited to project approval. Instead, they should provide incessant oversight that ensures that the agreed benefits are being realized. 51.6% reported that the Head of the Business Unit are also held accountable and 48.4% reported that accountability of business case target benefits were the responsibility of the Head of Information Technology. In practice, it is difficult to comprehend how the CEO might influence the realisation of benefits in a Business Unit that he has no mandate over. Clearly, there is a lack of clear and consistent decision and accountability frameworks at many African

Table 2. Cross tabulation of benefits management process formality and targeted benefits delivery.

Frequency of delivering on targeted benefits	100%	More than 75-99%	50-75%	25-50%	Total
Process formality					
Informal, ad hoc		6	16	5	27
Formal, not enforced		5	9	1	15
Formal, stringently enforced	1	10	7	1	19
Total	1	21	32	7	61

All evaluations are self-reports of managers responding on behalf on their organization; 13 organisations reported having no benefits management processes and were excluded from this analysis.

organizations (Ross and Weil, 2002).

The formal evaluation of benefits

Since there is a lag between project implementation and benefits accumulation, benefits must be actively managed (Peppard et al., 2007). Many researchers prescribe that benefits should be assessed regularly throughout the investment lifecycle and that measurement should continue until all planned commitments are met (Ashurst et al., 2008; Ashurst and Doherty, 2003). Subsequently, respondents were asked about when the formal evaluation of benefits realisation takes place. Only 28.9% of respondents reported that their organisations evaluate benefits throughout the program/project life cycle and beyond. The majority of respondents (36.5%) evaluated benefits at the end of the program/project while another smaller group of organisations (19.2%) evaluated benefits throughout the scope of the program/project life cycle. 13.5% reported no formal evaluation process and 1.9% reported evaluating benefits only when there are major changes to the project/program. Lin and Pervan (2003) also found that project managers tend to limit their focus on project management activities instead of actively managing the project to actively deliver business benefits. The literature also prescribes that organisations establish a baseline prior to project initiation to enable measurement of targeted benefits. On a 4-point Likert scale (from "always to rarely"), only 30.8% of organisations always establish a baseline, followed by 34.6% of organisations reporting that they execute this most of the times. The remaining organisations either establish a baseline some of the times (25.0%) or rarely (9.6%).

Delivery of targeted benefits

Of those respondents who have a formal benefits management methodology, only one of the firms reported achieving targeted benefits 100% of the time. Perhaps, more realistically, many firms (52.5%) reported achieving benefits 50 to 75% of the time, followed by a number of firms (34.4%) reporting that they achieve benefits more

than 75 to 99% of the time. Surprisingly, some firms (11.5%) reported achieving only 25 to 50% of planned benefits (Table 2). This means that close to all of the responding firms reported losing up to 25% of targeted benefits across their entire project portfolio. Of greater concern is the likelihood that this statistic of lost benefits may be substantially more in reality (Ward and Griffiths, 1996). Another concern is that following project completion, a number of firms (41.0%) reported that they do not have a formal process to handover the tracking of benefits to the business units. Of those (59.0%) who do have a formal tracking process, only 27.8% reported always incorporating project benefits into operating plans and/or the Profit and Loss statement. Only a minority of firms (14.0%) report that they end the tracking of the benefits once all the benefits are realized and formally reported on. The majority of the remaining firms end the process at project completion or after a defined period of time. A small number of firms reported not having a formal close off, or ending the process in an ad hoc manner. Despite significant benefit losses, the majority of firms (63.5%) made contradictory claims that they had experienced no project failure over the past 12 months, perhaps an indication of the substantial difference in paradigms between conventional project management goals and organizational goals.

In addition, two hypotheses were tested to further explore the links between benefits management and performance. H_1 stated that there is a negative relationship between the perceived degree of benefits management process formality and perceived degrees of project failure. Using Pearson's correlation, H_1 is not supported. Surprisingly, there is a faint yet positive association between higher degrees of perceived benefits management process formality and higher degrees of perceived project failure ($r=0.0473$, $p < 0.01$, $n=62$). It is well known that IT investments projects are susceptible to very high failure rates. H_2 stated that there is a positive relationship between the perceived degree of benefits management process formality and the perceived degree of benefits delivered. As expected, H_2 is supported as the degree of benefits management process formality was moderately and positively associated to the perceived degree of benefits delivered ($r=0.327$, $p < 0.01$, $n=62$). Table 3 shows the results of the correlation analysis.

Table 3. Relationship between perceived benefits management formality, perceived project failure and   perceived benefits delivered.

Dependent variable	Perceived benefits management formality
Perceived rate of project failure	0.0473*
Perceived rate of benefits delivered	0.327*

(*) Correlations are significant at the 0.01 level.

The literature suggests a clear link between a benefits management focus and the realisation of benefits (Ward et al., 1996). Surprisingly, the results provide contradictory results on the relationship between the degree of benefits management process formality adopted by firms and benefits realized. This result suggest that the manner in which firms are adopting benefits management, at least in terms of degree of formality, has little or no significant influence on benefits realisation. More specifically, firms that adopt a stringent formal process do not appear to perform significantly better than firms who have a less stringent process, or better than even those who report having no process at all. Perhaps, managers of those firms who have a greater benefits focus appear to be making a more realistic assessment of the success of their projects and benefits leakage, compared to those who have little or no formal processes or who emphasize conventional project goals. Alternatively, these findings may be pointing to the inextricable link between technology delivery and organisational change. In other words, while firms may have adopted a benefits management approach, they may be neglecting the crucial need for viable change interventions to actually deliver IS/IT benefits and consequently achieve project success. Another possible explanation is that a benefits management approach may also be serving merely as a symbolic expression of a rational and accountable management - it may be serving specifically as a political device or yet another procedural obligation for a funding requirement or for a general project evaluation.

DISCUSSION

Are formal IT evaluation processes necessarily better processes? If this is the case, why have the majority of firms, including some of the largest and arguably the most progressive in Africa, not established formal processes, as prescribed by the academic literature and IS/IT Governance bodies? The results of this survey of African firms show relatively high awareness of the business case and benefits management processes. Therefore, lack of knowledge cannot be touted as a sufficient explanatory factor for the prevailing issues in IT evaluation. Nevertheless, only a minority of firms are stringently enforcing a formal process for identifying and monitoring benefits from IT programs. This is not surprising given that prior studies in different continents

also found that benefits realisation methodologies were generally not being adopted effectively (Lin and Pervan, 2003; Ward et al., 1996). Yet, an inadequate IT evaluation process appears to be preventing a more precise articulation of IT program and project success, in a majority of cases. This potentially contributes to a largely unquantifiable degree of benefits leakage. Alarmingly, many firms acknowledged forfeiting more than a quarter of planned benefits across their project portfolio commitment. Viewed more closely to reality, it is reasonable to assume that these perceived losses may be substantially higher. Meanwhile, many firms failed to baseline their projects so that they can measure the incremental effect of their initiatives, thus compromising the ability of the governance oversight mechanisms to evaluate IT project delivery more accurately. It also appears that firms are reticent to terminate IT investments that are unlikely to deliver acceptable levels of benefits. Furthermore, the functionality of technology delivered - that is the delivery of the technical solution - continues to remain the key focus of IT projects. Researchers have pointed out that the capabilities of technology can only be fully exploited if the implementation coincides with new organisation capabilities (Ashurst and Doherty, 2003; Peppard et al., 2007). However, it appears that African firms, like their peers in other parts of the globe, are neglecting to assess and implement the organisational changes, that is, the new ways of working that are required to achieve planned benefits (Brynjolfsson and Hitt, 1998; Williams and Williams, 2007).

While in a very few instances, IT evaluation practices was followed rigorously, it appears that practitioners are tailoring these processes according to the type of investment. However, given the significance of benefits losses reported, it appears that practitioners are not being effective by omitting certain aspects of the IT evaluation process. It is questionable whether these omissions are being executed in a pragmatic and knowledgeable manner. While these concerns have drawn the attention of professional project management and IT bodies, the know-how to institutionalise the IS evaluation practice has not been sufficiently codified to inform and guide practitioners. Future research must delve into what is constraining an effective benefits management practice from becoming a routine component of the day to day work of IS/IT and business practitioners. For one, more work must be done on how traditional management, the management of systems development and project

management practices can incorporate an IT evaluation capability. More in-depth probing is also required into what organisational barriers, if any, are discouraging the adoption of an effective IT evaluation approach.

CONCLUSION AND IMPLICATIONS

The study presented in this paper is among the first attempt to examine the effect of formal IT investment evaluation processes among African firms. However, generalising the results of a convenience sample that stems from cross-sectional, self-reporting data which are restricted to firms in three countries must be undertaken with caution. Before concluding, we caution the reader that the generalisability of the results is limited to medium to large African firms from South Africa, Nigeria and Zimbabwe, as the current sample cannot account for variation in practices in the continent's variegated social and economic contexts. Next, one of the limitations of self-reported perception measures is that they are potentially imprecise reflections of actual benefits delivered or actual project failure. For instance, self-reporting on the use of benefits management, for covert and ritualistic goals, may overstate the actual benefits of a benefits management approach or understate the rate of project failure. It is also difficult to substantiate the claims of the respondents as to what constitutes a 'formal' adoption of the benefits management practice. The different interpretation of what constitutes formal benefits management also makes these findings difficult to compare or to generalize. It is also possible that the results reported here may have been influenced to some extent by the measurement error into the analysis due to the reliance on data reported by a single though well-informed source in each firm. Although the findings are generally consistent with similar global studies on benefits management, the modest sample and the point in time nature of the study, also limits the results. However, the survey provides preliminary evidence that benefits management approaches are becoming more popular and that firms are adopting elements of the benefits realisation approach, albeit inconsistently and ineffectively.

These caveats notwithstanding, this study provides a new source of a relatively unexplored concept in IT investment appraisal and benefits management formality, and has some important theoretical and future research implications. Despite its universal appeal, it appears that the IT evaluation practices should be tempered by need. A number of researchers have criticised the normative stance of IT evaluation for being too rigid and for not allowing for differences between firms or types of projects in determining the formality of the process. Previous failures of firms to use a formal benefits management process may be the result of the non-existence of adaptable processes that can be fine-tuned to the unique needs and circumstances of particular firms. One of the great voids in the literature on IT evaluation to date is knowledge about contextual, organisational and environmental conditions leading to behaviour patterns associated with formal evaluation processes. The limited empirical research in this area has not considered the idiosyncratic conditions that might affect the formality and content of the IS evaluation process. Future studies should identify such conditions as they relate to the formality of the benefits management process. Contingency theory could be used to explore how a multitude of factors, such as company size, project size, project complexity, IT usage, management expertise, and industry and project methodology may be influencing IS evaluation formality.

There is also a polarising tendency in IT evaluation research to focus on rational perspectives and thereby limiting subjective perspectives that may be dominating management decision-making practice. IT evaluation should perhaps also be viewed as inherently a subjective process, given the inherent difficulties in assessing the consequences of an IS/IT investment, as a result of various cognitive limitations such as bounded rationality and, information overload, and the human inclination to favour first impressions (Land, 2000; Serafeimidis and Smithson, 1999). Emotive drivers such as personal preferences, "gut" feelings, politics, intuition, entrepreneurship, ambition, instincts, and beliefs are also arguably just as pivotal in the decision-making process, and should not be simply dismissed as irrational by those who support normative and rational standards (Remenyi et al., 2007). Another issue is that IT evaluation can also serve a multitude of overt and covert goals. For instance, it may serve as a political device to rally support for a project that serves the self-interest of the manager proposing it. Therefore, understanding the role of socio-political factors in shaping the managers' intention to adopt a formal IT evaluation process, which in turn influences the actual adoption and use of these methods and frameworks, is also fertile ground for further research in the African context. Creating IT value by successfully performing formal IT evaluation practices remains a top challenge for African firms. On the face of it, formulating and implementing IT evaluation processes is a serious problem. And because of its intense nature, resource and process obstacles are making it a challenging endeavour. Nevertheless, these results provide preliminary insights into the effect of formal IT evaluation processes and IT investment performance. Longitudinal evidence would be necessary to find some definitive evidence on this issue. To conclude, perhaps for now the art, craft and science of IT value realisation is not understood sufficiently enough to prescribe a universal methodology. It may even be that prescriptions are overly optimistic given our embryonic understanding of the nature of IT value. What is certain is that more research is needed into the actual practice of IT value realisation.

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