Formal project management adoption readiness of emerging contractor firms in the Mangaung Metropolitan Municipality

Whilst the South African government has harnessed Emerging Contractor Firms (ECFs) as vehicles for promoting economic transformation and redressing historical economic disadvantage amongst previously disadvantaged groups, the capacity of these firms to transform the construction industry has been hampered by their lack of project management (PM) skills and techniques. The drive towards Broad-based Black Economic Empowerment in this industry, therefore, has been marred by evidence of poor quality construction, delays in project execution and completion leading to cost overruns and general public frustration with ECFs’ structures. Since these challenges are attributed to poor project management practices and a dearth of project management skills by most ECFs, there is scope to examine the interface between construction entrepreneurship and adoption of project management practices and/or techniques. Mindful of the ECFs’ involvement in construction programmes and projects on behalf of government, this theoretical study explores the extent and significance of project management readiness of emerging contractors (ECs) in the adoption and implementation of construction projects. The thesis of this article is that effective project execution can be conceived to be a chain reaction process: one in which organisational change management presupposes organisational readiness, whilst organisational readiness cultivates the situated context for a relevant organisational culture, structure and strategy base that trigger effective project implementation. PM skills constitute the foundation for successful project management context for a relevant organisational culture, structure and strategy base that trigger effective project implementation. Consequently, organisational readiness that entails the adoption and implementation of project management practices is essential for ECFs to attain and maintain effective project implementation.

Introduction and problem statement

Given that projects are temporary investments undertaken to fulfil objectives that are beneficial to society and stakeholders (Brown & Hyer 2010:2; Clements & Gido 2012:4; Pinto 2013:25; PMI 2008:5), it is logical to argue that each project entails real costs with regard to time, effort, financial and intellectual resources. As such, it can be argued that such critical resources should be deployed to only those investments that generate the highest returns for both the project executers, the main stakeholders and the rest of the society. However, the maximisation of project benefits require any organisation that executes projects to possess project management (PM) capabilities in order to deliver the project on time, within budget and according to stated quality standards (Larson & Gray 2014:3; Maley 2012:1; Pinto 2013:24). Whilst it is generally envisaged that the application of PM techniques and tools heightens the chances of successful delivery of projects of any size (Larson & Gray 2014:3; Pinto 2013:24; Steyn et al. 2013:1), the range of PM capabilities, skills and practices necessary for successful project implementation cannot be assumed to be ubiquitous. More so, organisational cultures that support agility and flexibility, and organisational structures which cohere with, and respond sufficiently to, pressing demands from multiple stakeholders during project implementation are not always inherent in small, emerging businesses in resource-poor contexts like South Africa.

Whilst emerging contractor firm (i.e. small, emerging construction companies) activities are inherently project based to the extent that they are temporary and time bound (Larson & Gray 2011:3), their project execution processes tend to be riddled with delays, poor implementation and general public dissatisfaction with completed structures such as building apartments, sewer and drainage systems, and tarmac roads. The poor project execution structure stems from...
a paucity of PM skills and capabilities, distressed organisational cultures and unsophisticated organisational structures. The impoverished PM skills and capabilities pool are manifest in the haphazard implementation of construction projects without conforming to any logical methodology (Construction Industry Development Board (CIDB) 2011:7), lack of systematic planning and coherent coordination of projects. The paucity of PM skills is also manifested in structural dysfunctions of Emerging Construction Firms (ECFs), which contribute to project failures and construction project-related litigations and investigations. A typical case is the Tongaat Mall collapse in KwaZulu-Natal that resulted in the loss of two lives and lead to the institution of a Commission of Inquiry (Ramutloa 2015) to investigate allegations of poor project management (e.g. poor quantification of building materials, site inspection), general workmanship (e.g. poor oversight of the project) and poor organisational structure for project implementation.

General public dissatisfaction with completed structures can be attributed to the lack of a results-oriented organisational culture and, more critically, to the lack of requisite skills (Aigbavboa & Thwala 2014) amongst ECFs. The South African print and electronic media are also awash with public frustration with ECFs over poorly constructed reconstruction and Development Programme (RDP) houses (i.e. low-cost housing for poor communities). The litany of complaints range from wall cracks, leaking roof tiles, poor drainage systems, improperly installed door locks and electrical faults, amongst other malfunctions. Shoddy construction has been found in the form of poor roofing, cracks, weak doors, damp, poor foundations and no floors (Odeku 2012; Sisulu 2005).

As noted by the Fédération Internationale des Ingénieurs-Conseils (FIDIC) (also called the International Federation of Consulting Engineers), ‘lack of quality in construction [sector] is manifested in poor or non-sustainable workmanship, and unsafe structures; and in delays, cost overruns and disputes in construction contracts’ (http://fidic.org/node/751).

In view of the above-mentioned complex revelations, the problem therefore, is the poor PM skills and capabilities pool, absence of quality results-driven organisational culture and weak organisational structures of ECFs for effective project implementation. These deficiencies result in poor project execution, project cost overruns and the erection of structures with multiple defects leading to huge costs of repairs by national government. Therefore, the successful execution of construction projects by ECFs implies a coherent intersection of high quality project management skills and capabilities, strong, outcome-oriented organisational cultures and adaptive, agile organisational structures. The current authors, therefore, wondered about the sequencing and constitution of a PM readiness model for ECFs if PM skills, organisational culture and organisational structures were to be considered in this model.

Problem background

History and rationale of emerging contractors

Ofori (1996) and Thwala and Phaldi (2009) report that contractor development in emerging economies emerged in the 1970s as a result of the increasing realisation of the incapacity of construction companies to contribute to national economic development. The incapacity of construction firms can be tracked back to their operation in a complex economic, political and legal environment (Ofori 1996; Malongane 2014), including a discriminatory past that challenged the provision of support to small, emerging businesses by large, well-resourced corporations. For apartheid South Africa, one of the main challenges of construction businesses was the discouragement of collaboration between large and small enterprises because apartheid policies prohibited joint entrepreneurial ventures between black- and white-run businesses (Berry et al. 2002; Shihivhase & Worku 2012). This undermined the smooth transfer of PM skills and financial resources from large established firms to emerging construction businesses.

In the South African government’s effort to economically empower individuals from the previously disadvantaged groups the Emerging Contractor Development Programme was initiated to enable them to start, manage and run small construction businesses. The long term sustainability of this programme was tied to legislative and policy frameworks such as the Broad Based Black Empowerment (BBBEE) Act and Preferential Procurement Policy Act (PPPA). These two policy frameworks give individuals from the previously disadvantaged backgrounds preference in obtaining tenders and work contracts in the construction industry (BBBEE Act 53 of 2003;PPP Act 5 of 2000).

Literature review

ECs and the construction industry

In South Africa, the activities and operations of ECFs are typical in the construction industry of the country. This is in line with the government’s effort to harness the importance of the construction industry to economically empower individuals from the previously disadvantaged groups, hence government is the highest client of the industry. Research suggests that government expenditure on construction industry projects hovers around 40% to 50%, and this industry contributes 5.1% to the Gross Domestic Product (GDP) of the country (Ncwadi & Dangalazana 2006:186; Ramokolo & Smallwood 2008:46). Khumalo, Nqojela and Njisane (2010) suggest that the 2010/2011 budget speech tabled by the Minister of Finance indicated that government planned to spend approximately R864 billion on construction infrastructure over the following 3 years. About 85.3% of this would be spent on the provision of infrastructure for electricity generation, roads, pipelines, bulk infrastructure
for water and sanitation, and housing (Jurgens 2010). Such a huge investment signifies the significance of the construction industry in the development matrix of the nation.

Mindful of the huge public financial investment in the construction industry, including the multiple ECFs in the country, it would be logical to expect ECFs to deliver quality construction projects within their specified budgets and on time. Sadly, whilst a handful of professionally-oriented ECFs have demonstrated sound project management skills, wide project implementation gaps still persist amongst the majority of ECFs operating in South Africa. The poor project implementation culture amongst ECFs stems from: poor project management expertise and experience, lack of basic project management qualifications, poor financial resource bases to purchase quality building materials and corruption in the post-tendering phase (Thwala & Phaladi 2009). Research in emerging economies such as Malaysia suggests that one of the chief reasons for construction project failures is the incapacity of the project architect to perform project management duties such as demonstrating project management competence, executing appropriate plans and PM perspectives (Rajoo 2010; Yadollahi et al. 2014). Ahadzie (2007) argues that achieving project success is tied closely to the possession of construction project management competencies. To this effect, successful construction organisations are now requiring that project managers obtain the principal PM competencies that they require to be successful in their jobs (Yadollahi et al. 2014).

Poor quality housing has sparked public debate in the South African construction arena. Zunguzane, Smallwood and Emuze (2012) investigated housing beneficiaries and contractors’ perceptions of non-conformance to quality requirements in low-income housing in Port Elizabeth in the Eastern Cape. Their findings attributed the multiple defects in low-income houses to the use of emerging contractors who had limited construction project management experience and who deployed unskilled labour in construction projects.

**PM and construction industry**

Given this bleak picture on the performance of ECFs in SA, it is logical to recommend a strong PM culture in the sector. Yet PM cannot be grasped outside the ambit of projects themselves. Projects are said to be unique and temporary endeavours are undertaken to create a unique product, service or result whilst considering the constraints of time, cost and quality in addition to meeting the concern of the environment and other stakeholders (Brown & Hyer 2010; Maley 2012:3; Steyn et al. 2013:3). For projects to be conducted successfully, a compendium of PM skills, knowledge, tools and techniques must be applied to project activities. Therefore, PM is generally considered as the application of a set of skills, knowledge, tools and techniques for project activities in order to meet project requirements (Clements & Gido 2012:14; Kerzner 2013:4; Maley 2012:2; PMI 2008:6).

There is an axiomatic relationship between projects, project management and the construction industry. Activities in the construction industry such as construction of new bridges, houses, factories, roads and ports, including the repairs and maintenance of such infrastructure, are mostly considered as projects because they are temporary, time bound, unique and are geared towards the creation of a unique product, service or result (Larson & Gray 2011:3; PMI 2008:6). Both the construction and maintenance of these structures call into question strong PM skills, knowledge, tools and techniques. This implies PM is the foundation for successful delivery of construction projects and activities. As such, Palaneeswaran (2006) argues that the construction industry is inherently project-based and adherence to coherent project management practices is critical to addressing the multiple stakeholders involved in construction projects. In fact, the PM approach has long been the style of doing business in the construction industry by the US defence department (Larson & Gray 2014:3), suggesting its indispensability in successful completion of construction projects. Hills et al. (2008) reiterate that as the design and construction phases of construction projects entail multiple specialists (e.g. project manager, construction manager, design engineer, construction engineer or project architect), project management is fundamental to their proper coordination, including provision of equitable solutions to the problems that arise during construction.

**PM and business strategy**

It would be insidious to conceive successful PM without due consideration of the business strategy of the organisation, as ECFs are essentially entrepreneurial business ventures whose success depends on the implementation of an appropriate strategy for effective project execution. Traditionally, a business strategy emphasised the clear positioning of the business (Volberda 2004). The contemporary focus of strategy has, however, shifted from positioning to progression of the organisation over a long period, taking advantage of the changing externalities through a combination of resources and competencies with the objective of fulfilling its stakeholder expectations (Johnson, Scholes & Whittington 2005; Volberda 2004; Zadeh & Ching 2007). The successful deployment of resources and competencies to advance stakeholder expectations, and the sustainability of the organisation (i.e. strategy) is intricately connected to PM, which focuses on successful project design and execution through the sustainable coordination and integration of project activities. Yet, despite this perceived need to connect PM to business strategy to allow efficient and effective implementation of project activities at the right time and place, as well as to derive corporate value, alignment of PM with the business strategy depends on the type, nature and complexity of the given project, including the interests of project stakeholders involved. To this end, there has been divergence of opinion on whether PM should be aligned to the overall business strategy or to the project strategy. Whilst some PM literature subscribes to the alignment of project strategy to business strategy (Gardiner 2006; Milosevic & Srivannabooin 2006), other literature maintains that projects should adopt their own strategy irrespective of the strategy
of the parent company (Arnaboldi, Azzone & Savoldelli 2004; Shenhar 2004; Zadeh & Ching 2007). Commenting on the Slovenian businesses’ project performance, Stare (2012:3) argues that improvisation is quite a common way of executing projects and, despite the official internal rules governing how projects should be implemented, many stakeholders do not consider them.

Another way of conceiving the PM-business strategy is to regard projects as tools of implementing the business strategy of an organisation as every project in an organisation should contribute to its strategic plan (ESI International 2006:2). In order for businesses to implement new strategies, PM tools and techniques can be used because new strategies can be considered as projects (Larson & Gray 2014:32), drawing on Porter’s generic typology.

Srivannaboon and Milosevic (2006) classify business level strategies according to several themes and align them with PM by using a case study methodology. According to this framework, PM consists of project strategy, organisation, process, tools, metrics and culture. Drawing on Porter’s generic typology for classifying strategy, Cooke-Davies et al. (2009) also align PM systems with strategy by arguing that components of PM systems that should be aligned with the business strategy are policies, people, structure and process (cited in Budayan, Dikmen & Birgonul 2015:94).

PM and organisational culture

Organisational culture is considered as the framework within which the strategic processes of the organisation operate in order to achieve its goals. The structure is also considered as the medium through which tasks and responsibilities are assigned within an organisation, which enables it to effectively manage and deliver the goals of the organisation successfully (Ehlers & LaZebny 2010:324; Pearce & Robinson 2013:321; Pinto 2010:62). Three types of organisational structures are considered as the key types used by organisations, namely, functional, project and matrix organisational structures (Ehlers & LaZebny 2010:324; Pearce & Robinson 2013:321; Pinto 2010:62). The organisational structure to adopt and use during project implementation is dependent on the organisational requirements, resources available to the organisation as well as its size. In ECFs, which are small-scale organisations with a small staff complement with fewer sophisticated skills than those of large organisations, a limited operational budget for project execution and limited external funding, the project structure is usually the best option. A project organisational structure is known to be used specifically in situations where activities within the organisation are managed using the PM techniques and tools. Therefore, for organisations to benefit from PM tools and techniques using organisational structure, the adopted structure must be able to satisfy the needs of the organisation. It is, however, important to note that without the appropriate organisational structure in place, PM implementation could become a difficult endeavour to undertake.

PM and organisational culture

The culture of an organisation is considered to comprise of the formal and informal practices and values that are shared amongst members of the organisation and are taught to new members (Kloppenborg 2012:59; Pinto 2013:76). Stare (2012:3–4) argues that project organisational culture can be viewed from two perspectives, namely:

- **Organisational strategy, structure, systems, behavioural patterns and processes of an organisation** that determine the internal environment required for project management to be successful.
- **Corporate culture with an indirect influence**: employees’ involvement, consistency (a strong internal culture, a concern with shared values), mission and long-term directions, adaptability to the environment (Kuo & Kuo 2010); how decision-makers respond to ambiguity, complexity, and uncertainty (Shore 2008); organisational direction, competitiveness orientation, decision-making rationale, cross-functional integration, communication philosophy and locus of decision-making.

In general terms, organisational culture could be considered as the way of life of the organisation or the way of life of the individuals within the organisation. This way of life denotes how organisations react and adapt in the long term to socio-economic, political and cultural issues and changes within the organisation such as labour legislation, technological innovations, demographic changes, financial shocks and political instability. It is therefore important to ensure that organisations adapt flexibly to changes in their external environment to ensure successful project execution and satisfaction of multiple stakeholders. Overall, Schwalbe (2009:208) concedes that good PM requires a supportive organisational culture. This implies that for PM techniques and tools to be adopted and implemented in an organisation, the organisation must exhibit a culture that supports it. In Larson and Gray’s (2014:81) assertion, no matter how well the organisational structure is, without a supportive culture the use of PM approach in project implementation can be hampered in an organisation. Larson and Gray (2014:82) further highlight that in situations where organisations implement the same projects, the implementation of the same projects might differ and bring different levels of results because of different organisation cultural levels.

PM and specialised skills

The acquisition of certain specialised skills is critical to an individual’s or an organisation’s skilful use of PM techniques and tools for effective and successful project delivery (Kloppenborg 2012:5; Maley 2012:1). With regard to the acquisition of PM techniques in any field, Kloppenborg (2012:5) distinguishes hard from soft skills, whilst Larson and Gray (2014:17) identify technical and sociocultural skills. What Kloppenborg (2012) considers hard and soft skills are what Larson and Gray (2014) regard to be technical and sociocultural skills, respectively. Hard and/or technical skills include risk analysis, quality control, scheduling, budgeting, resource allocation, whilst the soft and/or sociocultural skills include...
include leadership, problem solving, teamwork, negotiation, politics and other related skills which are also needed for successful implementation of PM tools and techniques (Kloppenborg 2012:5; Larson & Gray 2014:17). For the construction industry hard PM skills relate to the practical execution of projects (e.g. structural engineering skills, project design, interpretation of site maps and drawings, accurate measurement of materials and structures, forecasting of costs, costing of materials, scheduling of tasks), whilst soft PM skills denote ancillary skills relevant to the expediting of processes for project completion such as people coordination skills, interpersonal communication and leadership. Larson and Gray (2014:17) and Kloppenborg (2012:5) assert that for effective PM tools and technique implementation, these two sets of skills need to be acquired and used together.

**PM readiness of emerging construction firms**

CIDB suggests that most ECFs do not possess any PM techniques and tools in their project activities (CIDB Act 38 of 2000; CIDB 2011:7). This inadequacy has resulted in project cost overruns, project implementation delays and low quality of projects delivered by ECFs (Ncwadi & Dagalazan 2006:186; CIDB 2011:7). Based on these observations, it could be inferred that the paucity of PM tools and techniques amongst ECFs has compromised their ability to adopt PM for successful project execution. In view of the ad hoc adoption of PM tools and techniques by ECFs, including the above-mentioned public outcry on badly constructed buildings and structures, the consideration of formal PM approaches for ECFs cannot be overemphasised. Yet, the transition from ad hoc and uncoordinated project activities towards more coherent formal PM cannot be assumed to be automatic but rather necessitates the creation of a propitious work environment for its smooth implementation. The transition of ECFs to effective PM culture requires a conducive work environment comprising a supportive organisational structure, a hands-on or practical and results-oriented organisational culture and specialised PM skills necessary for successful project execution. The supportive organisational structure allows for the smooth assignment of work responsibilities and coordination of work tasks, appropriate, flexible delegation of authority for successful task assignments and/or execution and flow of work-based communication. The practical, task-oriented culture permits successful work completion through concentration on delivery of quality outcomes within budgetary limits and on time. Task orientation also allows tasks to be organised around the organisational strategy to improve work coordination, and where tasks deviate from strategy, corrective measures can then be instituted to ensure coherence or to explain deviations. Organisational skills are key to the success of PM implementation in the light of the skills gaps evident amongst ECFs owners bequeathed by the apartheid legacy. The skills deficiencies perpetuated by a legacy of sub-standard education, limited professional training and limited construction experience all crystallise into an amalgam that is inimical to successful project implementation. To this end, the combination of a supportive organisational structure task-oriented organisational culture and an assortment of organisation-wide PM skills will collectively trigger successful PM and project execution (see Figure 1).

**Proposed conceptual framework**

Understanding the formal PM adoption readiness of ECFs necessitates an appreciation of the constitutive components of the project implementation model to ensure the effective execution of PM techniques and tools in project activities of ECFs. The model suggests that formal PM implementation involves a complex change management process in which the PM-based organisation has an organisational structure, culture and PM skills base which are congruent with the organisation’s situated context and are moderated by organisational change readiness (OCR) (cf. Kloppenborg 2012; Pinto 2010). For ECFs, high levels of PM implementation depend on the conduciveness for change of organisational structure, culture and PM skills base which are congruent with the organisation’s situated context and are moderated by organisational change readiness (OCR) (cf. Kloppenborg 2012; Pinto 2010). For ECFs, high levels of PM implementation depend on the conduciveness for change of organisational structure, culture and the PM skills base of ECFs (see Figure 1). This implies that readiness of organisational change is a crucial precondition for effective implementation and management of formal PM techniques and tools within organisations. The framework assumes that once a conducive organisational structure, organisational culture and PM skills are available and moderated by Organisational Change
Readiness (OCR), there are high chances of effective implementation of projects. Since external variables such as the nature and size of the industry the ECF is in, the general performance of the economy, and competition from rivals are given, they were considered as unsuitable for inclusion in the model. Therefore, we argue that although the external environment provides a facilitative environment for the articulation of organisational readiness, the actual success of formal project management and/or implementation rides on a conducive organisational structure, organisational culture and prevalence of PM skills within the ECFs (see Figure 1).

Methodology

It was earlier emphasised that literature review constitutes the methodological approach in this study. The study is therefore theoretical. According to George State University (2015), theoretical research is ‘based on the observation of others’ and ‘runs no analytical procedures due to absence of empirical data’. The study employs concepts, constructs and relationships of variables drawn from literature to make logical inferences about the extent of formal project management adoption readiness of emerging contractor firms. The approach was, therefore, adopted because of lack of data on the project management adoption readiness of emerging construction firms in Mangaung Metropolitan Municipality.

Observations and discussion

This article has already alluded to the central place of the ECFs in the economic development agenda of South Africa, including the value of the construction industry in the redistribution of the economic wealth of the country. The challenge, however, is that the fulfillment of these mandates is neither automatic nor a simple enterprise given the highly complex nature of this industry, multiple legislation and multiple stakeholders deeply implicated in the reconstruction and development agenda of the nation. In South Africa, the complexity of construction projects arises from the multiple structural, contextual and professional complexities. The structural issues relate to the construction backlog amongst historically marginalised groups bequeathed by the discriminatory apartheid regime, the high demand for decent accommodation in the face of a rapidly expanding population and resource constraints that limit public provision of decent housing across various social groups. Contextual concerns undergird public pressure for decent accommodation that manifests in strikes and demonstrations for basic amenities, which have become a public spectacle across the breadth of the country. At the professional level there is the abundant evidence of project skills gaps amongst ECF owners, their low educational attainments that complicate effective project delivery and inadequate organisational structure for successful implementation of large infrastructural projects.

Combining the above-mentioned constraints becomes a recipe for construction disaster given that construction projects have to be delivered on time, within recommended budgets and of the appropriate quality. Therefore, formal PM techniques could enhance project implementation success by increasing chances of delivering successful projects on time, appropriate cost and quality whilst also satisfying stakeholder needs. Project management success, therefore, demands PM readiness, itself a mediator of organisational structure, organisational culture, organisational strategy and PM skills.

Significance of the contribution

Given the study objectives of determining the formal PM adoption readiness of emerging contractors, the theoretical discussion of this research should render an informative heuristic to:

1. Enable ECFs to realise the importance of organisational change readiness including adoption and implementation of formal PM techniques in their project activities.
2. Empower ECFs to identify and develop appropriate business strategies consonant with the types and scale of projects they implement.
3. Attract sufficient local corporate investment in ECFs, including the development of durable collaborations with the corporate sector on large scale projects.
4. Enable government construction regulation agencies to develop and monitor the PM skills base of ECFs and advise them on the appropriate organisational structure for effective implementation of their projects.
5. Enable government agencies to adjust and adapt current contractor development programmes to suit the skills base and organisational structural realities and complexities of ECFs.

Concluding remarks

The article argued that although PM techniques and tools are considered critical to effective implementation of ECF projects, the adoption of such tools and techniques is never an automatic process or a simplistic venture as effective project management implementation demands sufficient organisational change readiness. Such readiness sets the socio-cultural context and appropriate professional tone for developing a supporting organisational structure, coherent, results-oriented organisational culture, corresponding business strategy and PM skills base congruent with successful project execution. To this end, effective project execution can be conceived to be a chain reaction process: one in which organisational change management presupposes organisational readiness, whilst organisational readiness cultivates the situated context and aura for a relevant organisational culture, structure, strategy and PM skills base that triggers effective project implementation.

References
