An empirical analysis of construction organisations' competitive strategies and performance

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Abstract

Purpose – The essence of strategy formulation is to assist an organisation obtain a strategic fit with its environment and help enhance organisational continuous improvement in achieving performance excellence. The purpose of this paper is to investigate the type of competitive strategies used by construction organisations in attaining their strategic goals in South Africa.

Design/methodology/approach – The study employs an inductive research approach using a well-structured questionnaire to elicit information from large construction organisations based in South Africa.

Findings – The research identifies five strategic attributes that could assist organisations to grow their businesses and enhance their returns. It reveals that all Porters' generic competitive strategies are significantly related to organisational financial performance measures except focus strategy. The research found that three generic competitive strategies are positively related to non-financial performance and that differentiation and cost-leadership strategies are capable of assisting organisations' achieve their financial performance goals.

Practical implications – The study results will be of immense benefit to chief executive officers as well as managers of construction organisations in growing their businesses and enhancing their corporate performance.

Originality/value – The paper contributes both theoretically and empirically to the current discussion and findings on competitive strategy and its relationship with organisational performance. The results presented in the paper have important implications for the implementation of competitive strategies in construction companies and future studies in the area of strategic management.

Keywords Performance, Construction, Business strategy, Performance measures,
Organizational development, Competitive strategy

Paper type Research paper

Introduction

The South African construction industry has been a key driving force behind the nation's economic growth ever since it was targeted for reformation at the beginning of the post-apartheid era of the 1990s. The construction industry was considered one of the foundations of the country's plan for transformation (Bowen *et al.*, 2007). However, the sudden rise in interest rates in the late 1990s and the global economic meltdown

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of 2008 had a significant impact on the construction sector of the South African economy and many construction organisation did not survive the effect of these periods (CIDB, 2004; Joubert *et al.*, 2005; South African Reserve Bank, 2009). The construction organisations (AEC) that survived the recessive periods found themselves in highly competitive construction business environment with other foreign organisations (Joubert *et al.*, 2005). Competition was exacerbated further by the fragmented nature of the construction industry, the modus operandi, as well as its structural features. In order to confront the resultant challenges of uncertainties and fierce competition posed by the business environment, it is essential that organisations recognise and establish a strategic position that will integrate with their business undertakings and decisions (Dikmen and Birgonul, 2003; Phua, 2006).

There have been some important published research efforts that examine the impact of business strategies on AEC performance (e.g. Kale and Arditi, 2003; Li and Ling, 2012; Tan *et al.*, 2012). While some of these efforts are in the context of developed economies, the strategic perspectives that are appropriate for organisations in those countries may be significantly different in developing economies. Most importantly South Africa, where there are ordinances that enhance the growth of historically disadvantaged individual organisations without track records or known technical expertise (Martin and Root, 2012). Few studies have explored strategic management practices within AEC in South Africa (Ncwadi and Dangalazana, 2005; Adendorff *et al.*, 2011), yet no attempt has been made to investigate the impact of competitive strategies on AEC performance. AEC' competitive strategies are explored in the current study for a better understanding of how organisations achieve sustained competitive advantage (SCA) using Porter's (1980) generic competitive strategy model.

To address this knowledge gap, the paper structure begins with a review of existing literature, develops a conceptual model and research hypotheses for testing. The research methods and methodology are explained before delving into the presentation and discussion of the research findings. Finally the paper outlines the conclusion, research limitations and suggests areas for future study.

Literature review

Strategic management is a vast and well researched area of endeavour over the last few decades, most especially within the construction management field. The need to have deeper insights into AEC' strategic perspectives and competitiveness has been studied substantially by researchers (e.g. Betts and Ofori, 1992; Chinowsky and Meredith, 2000). Dikmen and Birgonul (2003) examined the strategic perspectives of AEC in Turkey. Dikmen and Birgnoul acknowledged that there are two major categories of AEC based on their competitive strategy: organisations that strive to achieve low-cost advantage through cost reduction and those that differentiate their services/product to maximise client's satisfaction. Kale and Arditi (2003) built on competitive strategy and neo-institution scholars' assertions, to explore whether competitive and institutional forces have effects on AEC' operations and performance in the US construction industry. Their research findings indicate that organisations compete in the construction market by differentiating their services or product from that of their competitors. This differentiation may be through price differentiation, innovation, quality or completion on-schedule (Kale and Arditi, 2003). Ling *et al.* (2005) also investigated effective business strategies and entry mode required of international architectural, engineering and AEC for managing construction projects in China. Ling *et al.*'s research suggest that AEC organisations need to adopt differentiation strategy

by providing superior services to gain competitive advantage and capture markets. In a similar research to identify the critical strategies used by AEC, findings show that organisations are more likely to employ strategies that differentiate them from industry competitors instead of pursuing a low-cost strategy or focus strategy (Li and Ling, 2012). Another recent study conducted by Tan *et al.* (2012) in Hong Kong found that generic strategies is being applied by contractors and that the implementation of suitable strategies will lead to superior performance in a favourable business climate.

Many of these studies had used Porter's generic competitive strategies in examining AEC' strategic perceptions impact on performance. Porter (1980, 1985) asserts that for organisations to obtain SCA, it will have to pursue one of the generic competitive strategies: differentiation, cost-leadership and focus. Price and Newson (2003) affirm that all three generic strategies are present within the construction industry and being practiced by organisations. Cost-leadership strategy would require an organisation to improve its competitiveness by being the lowest responsive tenderer, by lowering its production costs or aiming at attaining minimum costs for its construction activities (Price and Newson, 2003). Pursuing differentiation strategy does not imply that cost is of no essence, but the main objective is to differentiate itself from rivals by sustaining the uniqueness of their product(s) in the industry, along dimensions that are widely valued by clients (Dikmen and Birgonul, 2003). Finally organisations may achieve strategic advantage through the focus on a niche market instead of competing broadly in the market (Porter, 1980). AEC would normally adopt focus strategies by adding value to the whole construction process through the deployment of their capabilities and strategic core competences in areas such as procurement. In which case organisations could focus on procurement methods such as: Private Finance Initiative, Strategic Alliances and Design-Build-Operate, as a way of gaining SCA (Price and Newson, 2003). Porter (1985) cautions however, that organisations become stuck in the middle when they adopt more than one of the successful generic strategies in their pursuit of business in the marketplace.

Competitive strategies and organisational performance in construction

The concept of strategy in construction has been discussed variously in literature using different theoretical approaches and research methodologies to identify strategy-performance linkages (Phua, 2006; Li and Ling, 2012). Industrial organisation theorists assume that competitors in any industry have fairly similar strategies, resources and competencies, and that the performance of organisations in terms of profitability is a function of the structure of the industry that they operate in (Li and Ling, 2012). The resource-based view researchers argue that competitors can only achieve SCA as a result of resource differentials and the limited flexibility of such resources (e.g. Phua, 2006). Chew *et al.* (2008) assert that resources alone cannot translate to superior performance unless they are established into capabilities. This view is supported by Green *et al.* (2008), who contend that dynamic capabilities are a reflection of organisations' abilities to attain new and innovative forms of competitive advantage through reconfiguration of their available resources.

The main objective of the current study is not to entrench the theoretical pre-eminence of any theory but to draw strings of evidence that could enhance the understanding of the strategy-performance concept. Competitive strategy is a strategic perspective that can influence AEC performance. In fact, Ling *et al.* (2005) argue that the adoption of inappropriate strategies may cause low profitability, productivity and efficiency, and financial losses among other effects. Therefore,

Porter's generic strategies was employed to unravel the ambiguities surrounding how organisations achieve SCA by pursuing strategies that can assist in tapping the opportunities in the environment using their strength, while preventing internal weaknesses to defuse external threats. A plethora of attempts have been made by various strategy researchers to demonstrate the significance of generic strategies in construction management research (Kale and Arditi, 2003; Ling *et al.*, 2005; Tan *et al.*, 2012; Dikmen and Birgonul, 2003). Efforts have been made by previous studies to identify the nature of relationships between competitive strategy and performance, and establish how much influence these strategies have on performance, but the result is inconclusive. This may be the result of lack of unanimity on measures of performance and weak hypothetical generalisation of organisational performance predictors at organisation level (Phua, 2006). Allen *et al.* (2008) state that the measures of performance may be subjective or objective and contend that the two categories of performance measures have advantages and disadvantages. This study therefore examines whether there is relationships between organisational performance and competitive strategies using different measures of performance.

The following hypotheses are proposed to guide the direction of the study:

H1. There is strong positive significant relationship between competitive strategies and organisational performance measures.

H1a. There is strong positive significant relationship between competitive strategies and subjective measures organisational performance.

H1b. There is strong positive significant relationship between competitive strategies and objective measures organisational performance.

H2. There are specific strategic behaviour (or attributes) which are strongly associated with each competitive strategy (differentiation, cost-leadership and focus).

Methods

Sampling and data collection

This study considered large AEC, listed in Grade 7 to 9 on the CIDB Contractor Register in South Africa, as the unit of analysis in this research. Despite representing 7 per cent of the total registered AEC, approximately 75 per cent of public works are executed by these cohort of large AEC (CIDB, 2012). These organisations are believed to have an established competitive advantages in the industry. A total of 577 organisations operating in three major provinces in South Africa, where approximately 70 per cent of public contracts were executed in the last six years were identified as the population for the study. Since it is not possible to gather information from the entire population, it is necessary to consider a representative sample using a non-response bias approach for calculating minimum sample size (Ankrah, 2007). This resulted in a sample size of 277 and questionnaires were sent out to chief executive officers, directors and senior management staff, who have complete knowledge of the organisations' competitive strategy.

The constructs and related variables used in the questionnaire were identified through extensive review of literature. The survey questionnaire was thereafter tested in a pilot survey among academics and practitioners in the industry to evaluate content validity and ensure the reliability of the questionnaire. According to Kvale (2007), pilot surveys helps in the identification errors, restrictions, or other weaknesses within a questionnaire survey and allows researchers make necessary refinements prior to their

application. The research adopts an electronic-mediated approach to questionnaire administration in order to increase the response rate and reach out to a larger number of organisations due to the geographical dispersion of the sample frame, which makes other methods unrealistic (Saunders *et al.*, 2009). This approach reduces likely bias and assist researchers to access some organisations that may be difficult to reach since the survey questionnaire involves solicitation of performance data which many organisations refer to as classified information. The survey questionnaire used for soliciting information was designed in a way that there is no right or wrong answers to reduce bias and the respondents were asked to consider their organisation strategy holistically, relative to their industry competitors. In the end, 72 completed and usable survey questionnaires were obtained. Table I shows the profile of the respondents' organisation that participated in the study.

Research constructs
Through literature review suitable measures for the constructs shown in Figure 1, that have been validated and successfully used in previous studies were identified and adapted for this study (Dess and Davis, 1984; Kale and Arditi, 2003; Nandakumar *et al.*, 2010;

	Frequency	Valid (%)	Cumulative (%)
Years in business			
1-5	1	1	1
6-10	16	22	23
11-20	20	28.8	51
21-30	14	19	70
> 30	21	29.2	100
Number of employees			
0-99	20	28	28
100-199	31	43	71
500 and above	21	29	100
Grades of work			
7	35	49	49
8	17	23	72
9	20	28	100
Class of work			
General building works (GB)	27	37	37
Civil engineering work (CE)	20	28	65
General building and civil engineering works	25	35	100

Table I.
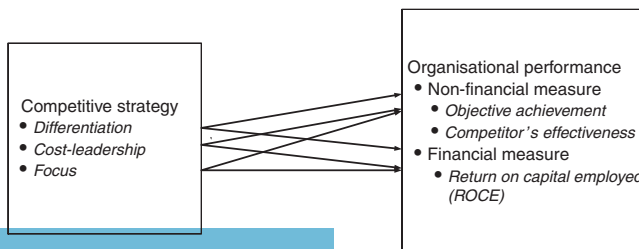Demography of respondents' organisations

Figure 1.
Conceptual relationship between competitive strategy and organisational performance

Pamulu, 2010). The evidence from these studies form the basis for determining the measurement scales of the three generic strategies. Differentiation strategy was measured using six items, cost-leadership was measured with six items while focus strategy was estimated using four items. All the variable were measured by asking respondents to indicate the degree to which their organisation emphasises the items of measurement on a five-point Likert scale, ranging from 1 (very low emphasis) to 5 (very high emphasis) (see Table IV for details of items of measurement). Performance measurement as a key concept in strategy research has witnessed an appreciable number of debates on the suitability of its measures (Venkatraman and Ramanujam, 1986). Hence, AEC performance was measured using objective, quasi-objective and subjective measures of performance. This research adopts these measures of performance based on the argument of Parnell *et al.* (2006), who contend that in examining linkages between strategy and performance, the choice of performance measures can dramatically influence the results and conclusion of such research. The subjective measurement scale used was adapted from Nandakumar *et al.* (2010) because of unreliability and unavailability of financial data (Kale and Arditi, 2003; Yee and Cheah, 2006). The subjective measures of performance used is objective fulfilment, which explains the degree to which an organisation has attained both its short and long-term goals and is able to reduce its challenges (Nandakumar *et al.*, 2010). The quasi-objective measures used are the measures of competitive effectiveness such as, market growth/share, growth in contracts awards, etc. Respondents were requested to compare their organisations' competitiveness with that of main competitors and indicate the degree to which the objectives of the organisations have been achieved in the last five years on a five-point Likert scale.

On the other hand, the objective measure of performance used in this study is the return on investment (ROI) in line with Jacobson (1987) and Palich *et al.* (2000). The main measure of business or investment performance is the Return on Capital Employed (ROCE). ROCE is adopted as the only objective measure of performance in this study. The study assumes that raw accounting values of performance measures such as return on asset may misrepresent the true value of fundamental measures (Hawawini *et al.*, 2003). According to Riley (2012), ROCE allows organisations to evaluate overall performance, offer a target return for individual contracts or projects, and enables organisations' benchmark their performance with competitors. Financial performance data over a five-year period were solicited, although, Kale and Arditi (2003) consider a three-year period to be long enough for such data. The reliability of each of the scales were examined using Cronbach's α coefficients to show their internal consistency. The α values range from 0.775 to 0.944, which is above the acceptable threshold 0.7 (Hair *et al.*, 2010). The data were analysed using descriptive statistics, correlation, multiple regression and factor analysis.

Presentation and discussion of results
Results
Descriptive statistics results presented in Table II shows the mean, standard deviation, Kurtosis, Skewness and correlation matrix, while Cronbach's α values for the constructs are shown diagonally. The mean values range from 4.0382 (focus strategy) to 503.36 (ROCE), and the standards deviation 0.338 (objective achievement) to 1732.98 (ROCE). The correlation among the latent constructs shows correlation coefficient ranges from 0.007 to 0.345. Differentiation strategy shows the highest correlational value with the objective measure of performance ($r = -0.345$), and the lowest was correlation between focus strategy and financial measures of performance ($r = 0.007$). Significant but negative

relationship was also found to exist between differentiation strategy and the financial measures of performance ($r = -0.345$, $p = 0.01$), while the significant relationship between differentiation strategy and cost-leadership depicts that some organisations differentiate to increase their market shares and later adopt cost-leadership strategy in the construction market. The correlation between differentiation and cost-leadership strategy may be due to the fact that they are sub-constructs of similar behavioural attributes suggesting a high level construct (Chew *et al.*, 2008). This result did not support Porter's argument that significant or positive relationship should only occur when organisations adopt pure strategies. Correlation among the constructs indicate that the data do not exhibit multicollinearaity as the coefficient of correlation are in general less than 1 (Hair *et al.*, 2010).

The research used multiple regression analysis (MRA) to establish the relationship between both the subjective and objective performance measures and competitive strategies. This way the hypotheses are tested. The results of the MRA are presented in Table III. Data for the study were first screened to ensure compliance and fulfilment of the underlying assumptions of MRA. Data screening ensures that multicollinearaity that can affect the predictive ability of the model do not exist. Table III indicate that the variance inflation factor is less than 10 and the collinearity statistic tolerance level not higher than 1. This indicates that there is no multicollinearaity that can hinder the predictability of the association between the variables by the models (Hair *et al.*, 2010). The data also complied with the normal distribution attributes of multivariate with respect to the values of kurtosis and skewness as shown in Table II. Bright (2008) suggests that data are considered to be in excellent form when the skewness range is fewer than 2 and kurtosis fewer than 7.

The research model 1 in Table III has a predictive ability of 15.8 per cent ($R = 0.397$; adjusted $R^2 = 0.158$; F-model $= 4.242$; $p = 0.001$). The model 2, has a low predictive power of 1.7 per cent ($R^2 = 0.131$; adjusted $R^2 = 0.017$; F-model $= 0.396$; $p \neq 0.05$). Model 3 has a better predictive power (5 per cent) than model 2 ($R^2 = 0.224$; adjusted $R^2 = 0.050$; F-model $= 1.193$; $p \neq 0.05$). These results compare well with research conducted by Nandakumar *et al.* (2010) and Teeratansirikool *et al.* (2013) that explore competitive strategies and its influences on organisational performance. The result in Table III shows that competitive strategies have significant relationship with objective measures, while focus strategy was insignificant. This depicts that differentiation and cost-leadership strategy of AEC are significantly associated with financial measures of organisational performance.

The results of the correlation analysis and MRA are used to test the hypotheses formulated in this study. *H1* states that there is a strong positive significant relationship

	Mean	SD	1	2	3	4	5	6	Kurtosis	Skewness
1 Differentiation	4.1157	0.39425	0.944						−0.201	−0.074
2 Cost-leadership	4.0972	0.43583	0.209*	0.775					−0.233	−0.212
3 Focus	4.0382	0.45706	0.109	0.111	0.842				−0.033	−0.565
4 Competitor's effectiveness	4.1514	0.54000	0.048	0.119	0.065	0.834			0.105	−0.929
5 Objective achievement	4.1574	0.33822	0.146	0.185	0.091	−0.052	0.784		−0.620	1.489
6 ROCE	503.3554	1,732.97747	−0.345**	0.120	−0.007	0.173	−0.077	na	na	na

Notes: ROCE, return on capital employed; na, not available. *$p < 0.05$; **$p < 0.01$

Table II.
Descriptive statistic, Cronbach's α and Correlation matrix for strategies and performance measures

Model	Dependent variable	Independent variables	B	SE	β	t	p-Value	R	R^2	ΔF	Collinearity statistics Tolerance	VIF
1	ROCE	(Constant)	4063.948	2827.984		1.437	0.155	0.397	0.158	4.242**		
		Differentiation	−1704.677	502.244	−0.388	−3.394	0.001***				0.949	1.054
		Cost-leadership	795.812	454.430	0.200	1.751	0.084*				0.948	1.054
		Focus	48.239	426.260	0.013	0.113	0.910				0.980	1.020
2	Competitors effectiveness	(Constant)	3.245	0.952		3.409	0.001*	0.131	0.017	0.396		
		Differentiation	0.027	0.169	0.020	0.161	0.873				0.949	1.054
		Cost-leadership	0.135	0.153	0.109	0.882	0.381				0.948	1.054
		Focus	0.060	0.143	0.051	0.417	0.678				0.980	1.020
3	Objective achievement	(Constant)	3.100	0.586		5.289	0.000***	0.224	0.050	1.193		
		Differentiation	0.091	0.104	0.106	0.877	0.383				0.949	1.054
		Cost-leadership	0.121	0.094	0.156	1.285	0.203				0.948	1.054
		Focus	0.046	0.088	0.062	0.520	0.605				0.980	1.020

Notes: ROCE, Return on capital employed. *$p < 0.10$; **$p < 0.05$; ***$p < 0.01$

Table III.
Regression models of competitive strategies and measures of organisational performance

between competitive strategies and organisational performance through both subjective and objective performance. Thus hypothesis *H1a* cannot be rejected because differentiation and cost-leadership strategies show significant relationship with the financial measures of performance except focus strategy. All the generic strategies show positive relationships except differentiation strategy with financial measure of performance, differentiation strategy having the largest effect because the coefficient of correlation is higher than -3, cost-leadership coefficient is below medium effect of +3 focus strategy having low effect on performance (Field, 2013). Thus, *H1a* was accepted and *H1b* too was partially supported since all the three generic strategies show positive but low and insignificant effects on performance when measured subjectively.

Table IV shows the results of exploratory factor analysis conducted to ascertain the specific strategic behaviours of the latent constructs of competitive strategies that exhibits high factor loadings. The three generic competitive strategies and subjective measures of performance variables were analysed using principal component factor analysis with oblique rotation (direct oblimin) and the principal component extraction approach. The oblique rotation with direct oblimin was used because the researchers expect the variables to be related. The oblique rotation splits the factors into pattern and structure matrixes (Field, 2013). This allows taking into cognisance the relationship between factors in case pattern matrix, which are suppressed due to a relationship between factors instead of arbitrarily constraining the factor rotation, structure matrix is a helpful double-check (Hair *et al.*, 2010; Field, 2013).

Kaiser-Meyer-Olkin (KMO) measure was used to verify the sampling adequacy for the analysis. The KMO for all the constructs analysed are greater than the threshold limit of 0.5 which is considered acceptable (Field, 2013). The initial analysis was conducted to obtain the eigenvalues for each of the factor in the data. Kaiser (cited in Field, 2013) suggests that all factors with eigenvalue greater than 1 should be retained. This is based on the premise that eigenvalues represent the amount of variation explained by a factor and the factor with eigenvalues higher than 1 depicts a substantial amount of variation. Two factors were also retained for both differentiation and cost-leadership strategy with 60.657 and 71.937 per cent of variance explained, respectively. Four variables converge in a single factor for focus strategy and this explains approximately 58 per cent of the variance. The variables that cluster on the same factors are named as indicated in Table IV. *H2* states that there are specific strategic behaviour or attributes which are more strongly associated with each competitive strategy. This hypothesis was supported by the factor analysis result and the attributes identified show the significance of the competitive strategies in influencing organisational performance.

Discussion of results

The main objective for adopting competitive strategies is to assist an organisation to achieve superior performance and SCA when compared with its competitors. According to Tan *et al.* (2012), the belief that one size fits all is not in existence in strategic management, as there is no single strategy that is capable of sustaining performance excellence in an organisation forever and in all situations. This research presents empirically explored propositions set forth in the study to provide an insight into the relationship between competitive strategies and organisational performance using both financial and non-financial measures in the South African construction industry context. The study adopted both objective, quasi-objective and subjective measures of performance because different strategies may be associated with different

	Factor loading Factor 1	Factor 2	Eigenvalue	(%) Variance explained	Cumulative (%)
Differentiation strategy					
On-schedule attributes					
Achieving on-schedule performance in construction operations	0.795				
Attempting to deliver constructed facilities ahead of schedule	0.782		1.271	31.784	
Quality attributes		0.766			
Achieving high quality beyond the requirements in the specifications					
Being highly response to client's request		0.751	1.155	28.873	60.657

KMO = 0.602, Bartlett's Test of Sphericity = 4.163, df = 6, p = 0.001

Cost-leadership strategy					
Low-cost attributes					
Emphasis on tight control of selling/general/administrative expenses	0.906				
Emphasis on price Competition (i.e. offering competitive price)	0.852		1.578	39.456	
Innovative attributes		0.825			
Emphasis on efficiency of securing raw materials (bargaining down the purchase price					
Emphasis on operating efficiency		0.737	1.299	32.481	71.937

KMO = 0.592, Bartlett's Test of Sphericity = 24.855, df = 6, p = 0.00

Focus strategy					
Cost advantage attributes					
Uniqueness of product (unique function or design)	0.872				
Offering specialty products tailored to a particular group of customers or users	0.837				
Targeting a clearly identified segment (i.e. focusing a provincial region or specific group of customers	0.692				
Offering products suitable for a high price segment	0.63		2.336	58.397	58.397

KMO = 0.701, Bartlett's Test of Sphericity = 52.749, df = 6, p = 0.000

Table IV.
Exploratory factor analysis result for the constructs

performance objectives (Gosselin, 2005; Parnell *et al.*, 2006). The study results show that AEC in South Africa adopt all the three generic strategies, which is consistent with assertions of previous studies conducted within the construction industry in other countries (Betts and Ofori, 1992; Price and Newson, 2003; Tan *et al.*, 2012).

The correlation and regression between competitive strategies and organisational performance measures show that cost-leadership strategies is positively and significantly associated with financial (objective) measures of performance while differentiation strategy is negatively related to financial or objective measures of performance. No significant relationship was found between focus strategy and the measures of performance. This finding implies that AEC perceive that both

differentiation and cost-leadership strategies will assist them in achieving their business objectives, and in improving organisational performance financially. This finding is consistent with the work of Kale and Arditi (2003) conducted within the US construction industry to empirically test hypotheses set by competitive strategy and neo-institutional scholars. The study is also in tune with the findings of Nandakumar *et al.* (2010), though, in the context of manufacturing companies in the UK which explains the inadequacies of the generic strategies in offering explanation on performance eclecticism.

The research results also affirm the earlier work of Olson and Slater (2002) and Gosselin (2005) that cost-leadership organisations tend to place high emphasis on financial performance measures. However, the results do not support the argument of Govindarajan and Gupta (1985) and Ittner *et al.* (1997a) that organisations that differentiate, place high emphasis on subjective measures of performance. Rather the result is consistent with the findings of Armstrong and Collopy (1996) where competitive strategies measured in terms of competitive-oriented objectives were negatively correlated with ROI. This invariably means the more managers tried to outperform their competitors in the market, the more they reduce their own profitability. The result lends support to the conclusion drawn by Teeratansirikool *et al.* (2013) that the alignment of competitive strategy with subjective measure of performance do not lead to significant improvements in organisational performance. However, this contradicts the position of Kale and Arditi (2003) and Hoque (2004), that subjective measures of performance are better predictors of organisations performance.

The factor analysis identifies some strategic behaviour that could enhance the strategies of construction organisation to grow and sustain competitive advantage to increase returns and satisfy its stakeholders (Tan *et al.*, 2012). These strategic behaviours are identified based on the variables clustered on each of the factors used in the constructs. The factors related to differentiation strategy refer to on-schedule attributes and quality attributes. These nomenclature suggests that in a hyper-competitive environment AEC can enjoy superior performance and SCA more than its competitors by differentiating itself (Porter, 1980, 1985). Construction organisation can differentiate by dealing with time-related issues in construction projects that has become a norm within the construction industry through speedy operations that improve project delivery, but not at the expense of compromising quality and other related issues (Kale and Arditi, 2003).

In adopting cost-leadership strategy, two factors are identified for the clustered strategic variables and these are referred to as low-cost attributes and innovative attributes. Low-cost attributes allows an organisation to achieve competitive advantage by producing low-cost products with good quality. The objectives of the organisation is to add values and offer low price by focusing on product improvement and close supervision of labour (Barney, 2011). Low-cost attributes may be as a result of large volume of production and economies of scale which can be used to reduce suppliers' threat (Kale and Arditi, 2003; Barney, 2011). Cost advantage attributes refers to the strategic behaviour exhibited by organisations practicing focus strategy. AEC focus on adding values to the entire project delivery processes through the adoption of focus strategy by employing their capabilities and strategic core competences in many areas such as procurement using Private Finance Initiative, Strategic Alliance, Design-Build-Operate (Price and Newson, 2003). Organisations that adopt this type of strategy enjoy more patronage and clients' loyalty because the focus is on a market segment (Porter, 1980).

Conclusions and future study

This research acknowledges that few studies have examined the competitive strategies adopted by large AEC in developing countries and within the theoretical framework available on strategic management. Scholars have conflicting views concerning the best strategies that influence AEC' performance. As a result, this research explored competitive strategies being used by large AEC in the South African context using financial and non-financial measures of performance. The research confirms that differentiation and cost-leadership strategy contributes to organisational performance financially, whereas they do not support the non-financial objectives of large organisations. Thus it is concluded that in a competitive construction business environment where AEC are finding ways to compete favourably, differentiation and cost-leadership strategies can lead to superior organisational performance through careful selection of performance measures. The research also identifies a list of strategic attributes that can assist organisations define their strategy better, and how each are linked to performance measures. However, this does not imply that organisations can sustain competitive advantage alone with a specific strategy, mainly by devoting attention to significant attributes. They must excel at those attributes identified in the study to outperform their competitors. Therefore, large AEC can survive in the dynamic and turbulent construction industry environment using any of the competitive strategies and identified attributes. These attributes include: being on-schedule, providing quality service, being innovative, and adopting low-cost or market segmentation strategy to grow their businesses and improve their returns on investment.

The research contributes to the current discourse on strategic management processes within the construction industry and extends the findings on the effects of competitive strategies on construction organisation performance to the South African context. In addition, the study offers an important practical implication in the use of balanced performance measures in enabling the management of organisations formulate and implement competitive strategies that will yield superior performance and offer competitive advantage.

In conclusion, the study is not without its limitations. The research investigated the competitive strategies and performance of large AEC that engage in public works in threes provinces of South Africa. Therefore to generalise the result for whole-of-industry, further research is required into the strategies being used by other organisations (including SMEs) that constitutes 93 per cent of AEC listed on the CIDB Contractor Register. Further research is also required to investigate the impact of the business environment on strategy and performance, as well as the mediating role of organisational structures on the strategy-performance linkages.

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