Performance, resources and capabilities of construction organisations: The mediating role of competitive strategies

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ABSTRACT

This study examines the relationships between competitive strategies, resources/capabilities and organisational performance in construction organisations. The main objective is to establish the mediating role of competitive strategies on the strength of relationship between resources, capabilities and performance of large construction business organisations in South Africa. A survey instrument was administered to Grades 7, 8 and 9 construction organisations listed in the Construction Industry Development Board (cidb) database. 72 usable questionnaires were analysed using descriptive statistics and correlations. The results show that organisational resources and capabilities do not exert a direct impact on performance of construction organisations, but technological resources showed significant relationship, when mediated by competitive strategy. This implies that performance of large construction organisations is contingent upon their competitive strategies and organisational capabilities, for them to achieve performance excellence. Furthermore, differentiation strategy influences an organisations' financial performance negatively whereas cost-leadership strategy has a positive impact. It provides empirical evidence on the relationship between competitive strategy and organisational resources/capabilities in a new setting.

KEYWORDS: competitive advantage, competitive strategy, construction business, performance, South Africa.

INTRODUCTION

The construction market environment is dynamic and very often unpredictable. Lee *et al* (2010) suggests that such unpredictable markets cause increases in the intensity of competition in the industry. This could aptly describe the South African construction market where a fiercely competitive market exists because of its massive infrastructure development programmes. Another reason for the high competition is the unevenness in the playing field occasioned by the preferential procurement system that promotes black-owned construction organisation over others. Consequently, the construction industry has become more fragmented, business profits have become marginal (AECOM, 2013; Oyewobi, Windapo & Rotimi, 2016), with negotiation processes being prolonged (McGeorge & Zou, 2013; Soetanto *et al.*, 2007).

Construction organisations therefore have to employ different strategies to survive, improve their profitability in the dynamic environment in which they operate. They need to have appropriate resources and capabilities that can ensure their favourable competition. Chew *et al*.

(2008) categorises organisational resources that could help achieve competitive advantage into: financial, physical assets, organisational, human and technological resources. However, Pfeffer (1994) cited in Neal *et al*. (2005) suggests that those resources sometimes fail to enable organisations achieve competitive advantage. It is imperative to explore how construction organisations can compete, maintain competitive advantage and at the same time, deploy resources that cannot be easily imitated by competitors (Barney, 1991; Lee *et al.,* 2010).

Resources alone may not guarantee sustainability or competitive advantage. Wernerfelt (1984) and Teece *et al* (1997) argue that resources have to be organised into capabilities in order to achieve competitive advantage. Newbert (2008) and Chew *et al.* (2008) contend that resources and capabilities cannot provide organisations with the required sustainability, competitive advantage, and superior performance until they are combined with appropriate competitive strategies. Thus, combining an organisations resources and capabilities with competitive strategies will provide solutions and clarify ambiguities surrounding how organisations could compete in their niche market (Chew *et al*., 2008; Newbert, 2008).

In the context of this paper, resources include finance, technology and human resources that are effectively and efficiently put into use by organisations to achieve business goals. Capabilities refer to the ability of organisations to manage their resources to attain competitive edge and advantage over their competitors. Parnell, Long and Lester (2015) suggest that their combination can help achieve competitive advantage, realise superior performance, which will in turn lead to continuous improvement in organisational performance over a very long time

Some strategic management scholars argue that organizational capabilities can be a principal source of firms' performance (Barney, 1991, 2001; Peteraf, 1993; Wernerfelt, 1984). The current study examines the mediating effects of competitive strategies in the relationship between organisational performance, resources and capabilities in the South African construction market. A similar study by Chew *et al.* (2008) had examined the relationship between a number of elements relating to core capability, competitive strategy and performance of SMEs within the Chinese construction industry. Exploring the interrelations between organisational resources and capabilities, the generic competitive strategies (cost leadership, focus and differentiation strategies) in the current study, follows Porter's seminal studies (Porter, 1980; 1985). The current study is in the context of large construction organisations operating in South Africa. The investigation covers the relationship between organisational resources and capabilities and competitive strategies; examines their influence on organisational performance using Industrial Organisation (IO) theory, resource-based view and the dynamic capability approach. The study will establish construction business strategies that could guarantee continuous growth and survival, and consequently improve their competitiveness.

THEORETICAL FRAMEWORK AND HYPOTHESES

One of the key objectives in contemporary strategic management literature is the identification of the sources and determinants of heterogeneity in organisations' performance (Spanos *et al.*, 2004). Research within the main strategic management stream and in the construction management field, have investigated the causes of performance differentials using different theoretical approaches (Chew *et al.,* 2008; Hawawini *et al.,* 2003; Spanos et al., 2004). Some of the approaches include: industrial organisation theory (IO), contingency theory, resource-based view (RBV) and the dynamic capability approach. Industrial organisation researchers

such as Porter (1980; 1985) contend that industry forces are the most important determinants of organisational performance, while resource-based view authors such as Barney (1991), argue that organisations' internal environment drive competitive advantage. Donaldson (2001) and Parnell (2013) assert that the major element of contingency theory is that organisational performance is dependent on the characteristics of organisations and how they obtain a beneficial strategic fit with environmental factors (i.e. contingency factors). Knecht (2014) argues that dynamic capability is not a legitimate comprehensive theory like other established theories such as IO, contingency theory and the RBV. However, it deals with key inadequacies of the traditional approaches, and its arguments are of significance for this study.

The IO and RBV approaches describe organisational performance from very different angles, and they underscore different sources of sustained competitive advantage. Wernerfelt (1984) submits that the two perspectives are 'two sides of the same coin' and not mutually exclusive. Therefore, the two views are complementary rather than conflicting, as they both explain the source of competitive advantage or performance. The current study takes the complementarity position because the Structure–Conduct– Performance (SCP) paradigm rooted in IO theory views organisational performance as a function of the structure of the industry, an element that is external to the organisation. It thus highlights dissimilarities in the profitability of industries and helps in appraising the performance level that can be reasonably expected from an organisation within a certain industry (Knecht, 2014). However, the specific behaviour of individual organisation, its resources and assets are not given considerations by the SCP paradigm. As a result, RBV adopts Resource–Conduct–Performance (RCP) paradigm to explain organisational performance.

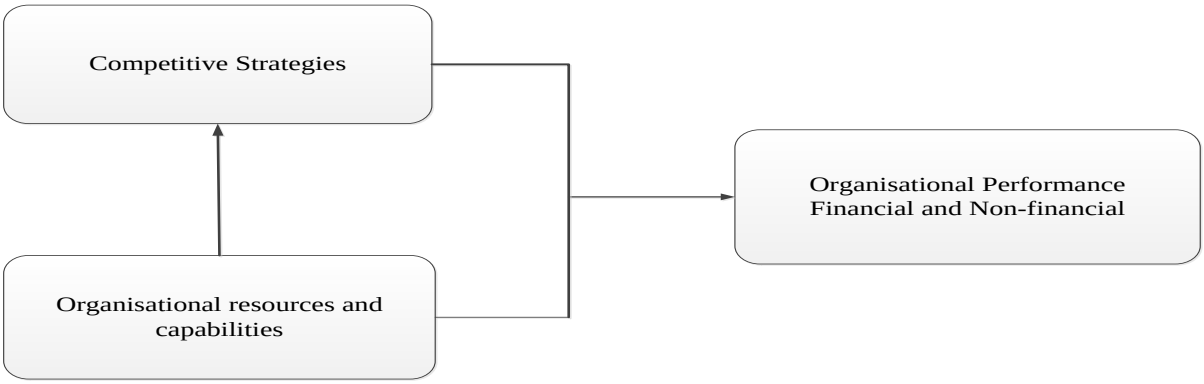

Figure 1: Theoretical Framework

The RBV authors argue that it is the resources and capability of an organisation that enable it to achieve above-optimal rate of returns and obtain sustained competitive advantage (Wernerfelt, 1984). Resources, capabilities as well as organisational structure contribute to the formulation of business strategies that tend to meet the demand and aspirations of stakeholders more than rivals and as such enhances the performance of organisations (Petusa-Ortega *et al*., 2010). RBV has shortcomings, which dynamic capabilities as an approach advances. The dynamic capabilities approach explains that organisations' capabilities are distinct from individual expertise or proficiency and are the foundation on which organisations' sustained competitive advantage are built. Chew *et al.* (2008) contend that the relationship between competitive strategy and performance shape organisational capabilities and the competitive environment. Thus, there is need to integrate these complementary approaches to develop a

Table 1: Some performance measures used in the research
Modified and adapted from Richard *et al.* (2009)

Author(s) and Year	Method (type of data)	Industry focused	Country of research	Measure(s) of Performance	Subjective/ Objective
Kale & Arditi, 2002, 2003	Survey	Construction	US	Growth in contract awards and profitability	Subjective
Ebben & Johnson, 2005	survey and secondary	manufacturing firms		Return on assets, return on capital invested, and return on equity	Objective
Phua, 2006	Survey	Construction	Hong Kong	firm profitability	Subjective
Fiss, 2006	Secondary	Public German corporations	German	return on equity	Objective
Zhang, George, & Chan, 2006	Survey	MNC consumer product subsidiaries	China	Return on investment, sales growth, profit level, and market share	Subjective
Acquaah, 2007	Survey	manufacturing and service firms	Ghana	Sales growth, net income growth, return on assets, return on sales, productivity growth	Subjective
Goerzen, 2007	survey and secondary	large Japanese MNEs	Japan	Operating return on sales, return on assets, operating return on capital	Objective
Elbanna & Child, 2007	Survey	textiles and clothing, chemicals, and food and beverage	Egypt	Relative financial performance, relative nonfinancial performance	Subjective
Crossland & Hambrick, 2007	Secondary	manufacturing and service firms	German, Japan and Us	return on assets, return on sales, sales growth, market-to-book value	Objective
Collis, Young, & Goold, 2007	survey and secondary	corporate headquarters	Europe, the U.S., Japan, & Chile	return on capital employed, total shareholder return, growth in sales turnover, overall effectiveness and cost-effectiveness	Objective, quasi-objective
Cho & Shen, 2007	Secondary	airline industry		return on equity	Objective
Chen & Miller, 2007	Secondary	U.S. manufacturing firms	US	return on assets, Altman's Z	Objective
Dikmen, Birgonul & Budayan, 2009	Survey	Construction	Turkey	Profitability, Workload and Company objective	Subjective
Pamulu, 2010	Survey	Construction	Indonesia	Marketing, sales growth, profitability and market share	Subjective
Budayan, Dikmen &Birgonul, 2011	Survey	Construction	Turkey	Profitability, Workload and Company objective	Subjective
Li and Ling, 2012	Survey	Construction	China	firm profitability	Subjective
Tan, Shen & Langston, 2012	Survey	Construction	Hong Kong	growth in contract awards, and profit	Subjective
Ho, 2015	Survey	Construction	Hong Kong	profit margin on turnover	Subjective

framework that will assist construction organisations in achieving sustained competitive advantage. The theoretical framework developed for the current study (see Figure 1), suggests that superior performance of construction organisations is contingent upon organisational capabilities and competitive strategy utilised by the organisation to compete in their business environments.

Organisational Performance

Sustainable business models could be a salient means to achieve a sustainable economy. Measuring performance is an activity every organisation needs to undertake to ensure that organisational goals are being achieved. Furthermore, organisations will need to develop, implement and monitor a strategic plan successfully. Performance measurement is an essential concept in strategic management, more importantly in an uncertain, hyper-competitive, complex and ever changing local and global business environments (Teeratansirikool *et al.*, 2013). Neely *et al.* (2005) conceptualise performance as "the efficiency and effectiveness of actions" and this is often used synonymously. Efficiency and effectiveness of actions are viewed to be the two basic components of strategic control and performance, which depicts doing things right and doing the right thing (Capon, 2008; Nelly *et al*., 1995).

While performance measures are considered helpful, there are arguments on how, why and when they are utilized (Parker, 2000). Addressing these questions is pertinent, so that organisations do not measure performance arbitrarily. The use of both financial (objective) and non-financial measures of businesses performance have been validated by a number of researchers (see Table 1).

Competitive Strategy

Competitive strategy postulated by Porter (1980; 1985) remains one of the most researched concepts in the strategic management field, and across different fields of studies. In spite of other strategies identified in literature (e.g. Miles & Snow, 1978). Porter's generic competitive strategies remain the most popular and generally supported in key strategic management literature (Allen & Helms, 2006; David, 2011). Within the construction industry, anecdotal evidence suggests the relevance of Porter's generic strategies (Betts & Ofori, 1992; Price *et al.*, 2003). The typologies that are found useful in construction research are cost-leadership, focus and differentiation strategy. Porter (1985) contends that each type of these generic strategies can be adopted under different situations and that an organisation performs best when it pursues one of them, but they get stuck in the middle when more than one strategy is pursued at a time.

Strategy is an important aspect of any efficient business plan, thus by adopting a competitive strategy, an organisation identifies its market segment and acquires knowledge about its customers (Porter, 1980). Traditionally within the construction industry, successful tenderers are selected through competitive tendering based on lowest responsive tender principle, therefore many organisations pursue low cost or cost-leadership strategy to win their tenders (Dikmen & Birgonul, 2003; Price *et al.*, 2003). Consequent upon this, some construction organisations confront intense competitive environments by differentiating themselves from competitors in the market through: procurement methods that offer value for money, improving on quality achievement and by completing jobs on schedule. These are done by adopting differentiation strategy. Other organisations confront the dynamic construction market environment by concentrating in certain regions, on group of individuals, sector of the industry

or focus on core competency areas by pursuing focus strategy. Allen and Helms (2006) conclude that irrespective of the strategic position taken by organisations, they strive to obtain a beneficial fit with their goals and objectives in order to achieve sustained competitive advantages.

Strategies and Organisational Performance

The review of strategies in this section is largely based on Porters' seminal work on strategy typologies. The study undertakes brief review of these strategies and their influence on organisational performance. Competitive strategy is that which organisations develop to pursue and achieve their long-term objectives using every mechanism that enables them to measure and monitor the progress made towards achieving those objectives, and make needed modifications to keep within plan. Beard and Dess (1981) argue that competitive strategies are significant in determining profitability and the heterogeneity of organisational performance. The concept of competitive strategy and its influence on construction organisations' performance is gaining interest (Kale & Arditi, 2002; 2003; Tan *et al*., 2012). For example, Li and Ling (2012) explore the critical strategies used by architectural, engineering and construction firms in China to achieve profitability. Their study shows that organisations adopt practices that differentiate them from their rivals rather than focusing on low-cost strategy.

Cost-leadership strategy represents a combined set of actions taken to provide low-cost products or services with unique features in comparison to competitors or at a price lower than that of industry rivals to achieve superior profitability. Few studies have found significant relationship between cost-leadership strategy and performance (Allen & Helms, 2006; Power & Hahn, 2004). In fact, Dess and Davis (1984) research indicates that the overall low-cost group exhibits highest average return on assets. Valipour *et al. (*2012) also support the findings by concluding that cost leadership strategy positively relates to organisational performance. In other words, organisations can achieve low-cost strategy in construction through mass production, economies of scales, technological advancement, full capacity utilization of resources, access to raw materials etc. (Davidson, 2001; Malburg, 2000).

Some other research studies have indicated that differentiation strategy was a better approach to achieving sustained competitive advantage than cost-leadership strategy (Baines & Langfield-Smith, 2003; Kotha & Orne, 1989; Kotha & Vadlamani, 1995; Miller, 1988). Differentiation strategy involves creating competition with rivals by differentiating products and services uniquely through value adding or the creation of a brand name or image. Teeratansirikool *et al. (*2013) contend that organisations that pursue differentiation strategy, perform better than their competitors.

Lastly, the focus strategy that involves concentrating on a market segment, through focused cost-leadership strategy or focused differentiation strategy. Partnering on construction projects, provincial or regional specialization, delivery of value added skills by reducing to core competencies, and design and build are typical examples of strategy based on cost focus (Price *et al.*, 2003). The findings on the performance effects of competitive strategies are inconclusive. Authors such as Parker and Helms (1992) contend that organisations achieve superior performance with mixed and reactive strategy as well as with pure generic strategies. In fact, Banker, Mashruwala and Tripathy (2014) reported that both cost leadership and differentiation strategies exhibit a positive impact on contemporaneous performance. However, Banker *et al.* (2014) concluded that differentiation strategy permits a firm to sustain its current

performance in the future to a greater extent than a cost leadership strategy would. Whereas, Hill (1988), Murray (1988), Acquaah and Yassai-Ardekani (2008) and Claver-Cortes *et al.* (2012) argue that hybrid strategy leads to a better and superior performance than single strategies.

Some of the studies that focused on the construction industry, create significant awareness on the performance effects of competitive strategy within context. Although, quite a number of the studies examined how organisations can achieve superior performance through the adoption of competitive strategy using different research approaches. There exists little research that explores the mediating role of competitive strategies in the relationship between organisational resources, capabilities and performance. Due to the incongruence in the relationship between performance and competitive strategy, this study hypothesises that:

H1: Competitive strategies (differentiation, cost-leadership and focus) is significantly related to organisational performance.

Organisational Resources and Capabilities

Very few organisations can confidently provide the exact value of resources they hold, and how sustainable those capabilities are to advance strategic capability. The competency or proficiency of an organisation to perform or remain at the level expected, and to continually survive the turbulent environment and flourish is described as an organisation's strategic capability. The resources in this context consist of all assets, information, organisation attributes, capabilities, organisational processes, knowledge, etc. structured by an organisation to enable it formulate and implement competitive strategies (Barney, 1991). The current research considers both parts of the definition provided by Barney (1991) that is, the strategies which helps in improving organisation's efficiency and effectiveness as well as the resources which conditions strategy to achieve excellence in performance. Many researchers, especially those that contributed to RBV approach suggested several constructs, such as resources, capabilities, competencies, skills, factors and assets, to denote different purposes (Bridoux, 1997; Knecht, 2014). Therefore, the current research investigation will use the expression 'organisational resources' as a generic construct that incorporate financial, human and technological resources (Chew *et al.*, 2008). These organisational resources are a measure of organisation's capability.

However, proponents of the resource-based approach of organisation (Barney, 1991) have contended that traditionally, technology, capital resources etc. are becoming less effective as sources of competitive advantage because they are easily copied. Resources on their own cannot lead to competitive advantage unless they are shaped into capabilities, which characterises the hypothetical dimensions of competitiveness from organisations' performance (Chew *et al.*, 2008). Therefore, organisations use resources to shape their strategies, to respond to exigencies of the competitive environment and acquire capabilities that match their dynamic operational environment. To examine these relationships, this study suggests that:

H2: Positive and significant direct relationships exist between construction organisation's resources and performance.

Competitive Strategy, Resources/Capabilities and Performance

In construction business context, organisations pursue different strategies to win tenders and become competitive. Organisations that intend to pursue any of these generic competitive strategies would require different resources and capabilities to achieve superior performance. For example, a cost-leadership organisation tends to achieve cost reduction through organisational learning and economy of scales (Kale & Arditi, 2003). This can be achieved by incorporating systems, technological resources and processes that will maximise direct managerial influence over workers behaviour and attitude such as effective contract administration, site management, and reduce any opportunities for individual difference in skill that can impact output (Kale & Arditi, 2003; Neal *et al.* 2005). Economies of scale can be achieved through access to financial resources or execution of similar projects which might be problematic as no two projects are completely the same (Kale & Arditi, 2003).

Organisations that differentiate their activities based on quality and innovation need highly skilled human resources that are effective and well-motivated. Such organisations require strong financial strength and technological advancement, with significant investment in human capital development through training, induction etc. The value added by the unique product, service or innovativeness of processes, allows a construction business to charge a premium price that could result in competitive advantage. Customers have a tendency to perceive such products or services to be different and better than those of competitors. Porter (1985) submits that continuous sustenance of differentiation strategy may translate to above average performance, which place the business in a better position to charge a higher premium price to cover for the cost of achieving uniqueness.

Organisations that adopt focused strategies obtain considerable levels of patronage and a high degree of customer loyalty, which often discourages competitors (Porter, 1985). Focus strategy gives organisations the opportunities of having a greater understanding of the market niche, thus they enhance their organisations' specialisation by providing the needs of the segment with lower investment in resources. Construction organisations focus on adding value to the whole construction processes by adopting more focused strategies, employing their capabilities and strategic core competences in many niche areas. For example, there are newer procurement arrangements unique to the construction industry such as: private finance initiatives, strategic alliancing, design-build-operate to name a few (Price & Newson, 2003). Based on the foregoing, this study hypothesises that:

H3: Competitive strategies mediate in the relationship between an organisation's resources, capabilities and performance.

METHODOLOGY

Sample and Data

This study comprises a survey of large construction organisations in the South African construction industry using a non-response bias technique to determine the population size. For sampling purposes, a list of large construction organisations engaging in civil engineering and general building works listed in Grades 7, 8, and 9 on the Construction Industry Development Board (cidb) Contractor Register and based in three major provinces: Gauteng, Kwazulu Natal and the Western Cape were obtained. There are 577 active construction organisations in these

regions. A systematic random sampling technique following Ankrah (2007) was used to reduce the sample size to 277, to ensure a representative sample of all contractors. The study questionnaire was administered to Chief Executive Officers, Directors or persons that have in-depth knowledge of the strategic objectives of the construction organisations. The survey was administered online through an email link to the participants. 72 valid and usable responses were received, which is analysed in this study. A summary of the demographic data obtained from the participating organisations is provided in Table 2. Non-response bias was determined following Ghobadian and O'Regan (2006), to ascertain if there are differences in the perceptions of early respondents and late respondents. The comparisons of the two groups showed insignificant differences in any of the measured items. Care was taken to ensure that the survey questions do not have a wrong or right answer, based on a measurement scale that has been extensively validated in other countries. Furthermore, a few randomly selected large construction organisations were interviewed to validate the measures related to some of the research constructs, more importantly the measures of organisational performance.

Table 2: Demography of organisations surveyed

Demographic Information	Frequency	Valid percent	Cumulative percent
Years in business			
1 - 5yrs	1	1	1
6 - 10yrs	16	22	23
11 - 20yrs	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

Measures

Independent variables

The independent variables used in this study are competitive strategies, resources and capabilities, which are relevant in the construction industry (Dikmen & Birgonul, 2003; Price, 2003). The measures of resources and capabilities are financial, human and technological resources. Suitable measures of the constructs outlined in this study's conceptual model were identified and outlined in Table 3. Cheah *et al.* (2007), Chew *et al.* (2008), Dess and Davis

(1984), Kale and Arditi (2003), Nandakumar *et al.* (2010) and Pamulu (2010) provided ideas for determining the measurement scales of the three generic strategies, resources and capabilities. Differentiation and cost-leadership strategy were measured using six items on a 5-point Likert scale, while focus strategy was estimated using four items on a 5-point Likert scale.

The study estimated financial capability, human resource and technological capability using four, six and five items respectively, on a 5-point scale. Participants ranked the level of influence of the variables on organisational performance on a Likert scale of 1-5. Table 4 to 6 explain the items used to measure the research variables.

Table 3: Constructs for the study and sources of measurement items

Constructs	Variables	Sources of the measurement items
Strategies	Business strategy: Differentiation; Cost-leadership; and focus	Kale and Arditi (2002); Nandakumar *et al.* (2010), Pamulu (2010); Tan et al. (2012)
Resources and capabilities	Financial; Human resources; Technology	Cheah *et al*. (2007); Lynch, 2012; Rush, Bessant, and Hobday (2007).
Organisational performance	Financial and non-financial	Bassioni (2004); Bergin-seer (2004); Gupta and Govindarajan (1984); Nandakumar *et a*l. (2010), Porter (1980); Warren (2009); Wu (2009).

Dependent variable

There are divergent perceptions on the relevance of different methods used in conceptualising and measuring organisations' performance in strategy research (Ventatraman & Ramanujam, 1986). Some researchers consider subjective measures as more appropriate than objective measures (Lukas *et al.*, 2001; Ventatraman & Ramanujam, 1987). Although Allen *et al.* (2008) argue that both measures have inherent advantages and disadvantages. The current study employs both in examining the nexus between strategy and performance (Parnell *et al.*, 2006). Robinson *et al.* (2005) argue that construction organisations use a range of financial and non-financial measures to assess construction business performance.

The objective measure of performance (financial) used in this study is the return on investment (Palich *et al.*, 2000). Financial data were sourced for a 5-year period and the average values of return on capital employed (ROCE) calculated for the period. Return on capital employed is acknowledged as the most widely used measure of profitability (Ho, 2016). Other accounting values such as return on assets, market growth etc. are categorised as competitor's effectiveness measures (quasi-objective measures). For the subjective measures, the objective achievement which is adopted to examine the degree to which organisations have been successful in achieving their overall objectives, is used. The measurement items for both quasi-objective and subjective measures were adapted from previously validated studies (Bassioni *et al.*, 2008; Dess & Davis, 1984; Kale & Arditi, 2003; Nandakumar *et al.*, 2010).

This study measures objective achievement (subjective measure) using six items, while competitive analysis (quasi-objective measures) was estimated from ten items. Participants

were required to compare their performance in the last five years with that of their competitors based on variables identified on a 5-point Likert scale. The constructs are illustrated in the model and the measurement scales are described in Table 6.

Table 4: Measures of generic competitive strategies for construction organisations

Constructs	Items	Mean	SD	Loading	Cronbach's Alpha	% of variance explained	Eigen values
Differentiation strategy					0.944	60.657	2.426
	Achieving on-schedule performance in construction operations	4.1389	.86081	0.795			
	Attempting to deliver constructed facilities ahead of schedule	4.1111	.89687	0.782			
	Achieving high quality beyond the requirements in the specifications	4.1667	.75059	0.766			
	Being highly response to client's request	4.0417	.77709	0.751			
Cost-leadership strategy					0.775	71.937	2.868
	Emphasis on tight control of selling/general/administrative expenses	4.0139	.86388	0.906			
	Emphasis on price Competition (i.e. offering competitive price)	4.1667	.83918	0.852			
	Emphasis on efficiency of securing raw materials (bargaining down the purchase price	4.0278	.82175	0.825			
	Emphasis on operating efficiency	4.0694	.83872	0.737			
Focus strategy					0.842	58.397	2.336
	Uniqueness of product (unique function or design)	4.1111	.77923	0.872			
	Offering specialty products tailored to a particular group of customers or users	4.0000	.83918	0.837			
	Targeting a clearly identified segment (i.e. focusing a provincial region or specific group of customers	4.0833	.80053	0.692			
	Offering products suitable for a high price segment	3.9583	.98492	0.63			

Control variable

The study uses the size and years of existence of construction organisations as control variables, to control for the influence that these may have on performance of organisations (Pertusa-Ortega *et al.*, 2008). Organisational size was determined by the number of employees and the age depicted by number of years in construction business, both are taken to their natural logarithm.

Table 5: Measures of resources and capabilities for construction organisations

Constructs	Items	Mean	SD	Loading	Cronbach's Alpha	% of variance explained	Eigen values
Financial					0.58	59.820	2.393
	Ability to use company's own fund/finance to finance construction works	4.0000	.93447	0.721			
	Ability to get equity-selling part of the company	3.9583	.97052	0.708			
	Ability to secure debt or loan to fund expansion, improve profit ratio and improve cash-on-cash returns	4.1667	.80491	0.786			
	Ability to secure surety bond or insurance policy	4.1389	.81024	0.763			
Human resources					0.694	62.34	3.741
	Strengthen the procedures for recruitment, training & promoting all levels of employees	3.9583	.89502	0.842			
	Enhance reward & recognition program for motivating and challenging employees	4.0417	.87914	0.823			
	Development of organisation capabilities through participation of top managers & technical personnel in professional development	4.0694	.86116	0.683			
	Create enabling working environment that reduces absenteeism and maintain considerable level of employees' turnover	4.0556	.88634	0.676			
	Manage talent & enhance staff knowledge and skill in strategic areas	3.9861	.84742	0.541			
	Improve relationship with employee/trade union	3.9444	.99136	0.796			
Technological					0.581	51.038	2.552
	Company assessment of technological opportunities and threat is effective	3.9722	.88767	0.667			
	Company R& D in technological activities are well organised to ensure allocation of resources efficiently	3.9167	1.04477	0.570			
	Creation of work environment that encourages creativity and innovation	4.1806	.79304	0.622			
	Technology play a key role in firms' business as well as quality of equipment	4.0000	.80491	0.707			
	Company is efficient in integrating new technology into business system and process	4.2639	.78710	0.762			

Table 6: Measures of quasi-objective and subjective performance for construction organisations

Constructs	Items	Mean	SD	Loading	Cronbach's Alpha	% of variance explained	Eigen values
Competitor Effectiveness					0.834	51.226	5.122
	Productivity	4.2603	.86646	0.867			
	Profitability	4.3521	.71910	0.733			
	Growth in market share	3.9863	1.03405	0.523			
	Return on investment	4.0959	.72962	0.724			
	Financial ratios	4.2466	.84625	0.684			
	Competent workforce	4.1781	.91807	0.650			
	Growth contract awards	4.0822	.90911	0.818			
Objective achievement					0.784	70.446	2.818
	Predicting organisation's future to enhance decision-making	4.0556	.80297	0.896			
	Evaluating alternative based on relevant information to increase market share	4.0972	.77204	0.743			
	Resolving problems to enhance employee's commitment and satisfaction	4.3333	.78722	0.795			
	Promoting management development and learning	4.0833	.80053	0.884			

DATA ANALYSIS AND RESULTS

Construct Reliability and Validity

This study followed the exploratory factor analysis (CFA) techniques for assessing reliability of measurement scales as given by Hair *et al.* (2010). SPSS was used to assess the reliability and validity of the constructs in this study. Previous studies (such as Hair *et al.*, 2010) recommend that Cronbach's alpha, the percentage of variances, factor loadings as well as eigenvalues are useful indicators of constructs reliability using factor analysis technique. The study ensure content validity of the items was achieved through extensive review of literature to identify the items included in the questionnaire. The study addresses the issue of reliability of the scales used to know the extent of consistency between the multiple of the measurement variable (Hair *et al.*, 2010). This was evaluated using Cronbach alpha coefficient as shown in Table 4, 5 and 6, some of the measurement items have above below 0.7 coefficient threshold. Although previous researchers have suggested that the minimum acceptable Cronbach's alpha value is 0.7, although Nandakumar (2008) recommended that a Cronbach's alpha value of 0.6 could be considered acceptable in exploratory research, such as in the present study. Construct validity of the items was examined using Pertusa-Ortega *et al.'s* (2008) approach. Convergent validity was evaluated using exploratory factor analysis to identify items included in the measurement scales that are correlated or loaded on factor. Items with loading factor above 0.5 threshold were retained according the common rule (Field, 2013; Hair *et al.*, 2010). From the eigenvalues structure shown in Tables 4, 5 and 6, the study concluded that they are valid and reliable despite some low reliability shown by financial and technological resources constructs (Haspeslagh *et al.*, 2012). Detailed examination of the items in the scale was conducted to

evaluate the divergent validity, this indicates that the items in factor generally correlated significantly and positively with each other but do not associate with corresponding items of the other constructs (Pertusa-Ortega *et al.*, 2008) as indicated in Table 7.

Table 7: Descriptive statistics of the variables used in the study

Constructs	Mean	Std. Deviation	1	2	3	4	5	6	7	8	9
1. Differentiation	4.1157	.39425	1								
2. Cost-leadership	4.0972	.43583	.209*	1							
3. Focus	4.0382	.45706	.109	.111	1						
4. Financial resources	4.0660	.47470	-.104	-.068	-.060	1					
5. Human resources	4.0093	.44396	-.105	-.102	-.063	.150	1				
6. Technological resources	3.4602	.40306	.346**	.121	.026	.065	.170	1			
7. Competitor effectiveness	4.1514	.54000	.048	.119	.065	-.008	-.039	.076	1		
8. Objective achievement	4.1574	.33822	.146	.185	.091	-.018	.101	-.019	-.052	1	
9. ROCE	503.3554	1732.97747	-.345**	.120	-.007	.125	-.006	.132	.173	-.077	1

** Correlation is significant at the 0.01 level (2-tailed). * Correlation is significant at the 0.05 level (2-tailed).
ROCE- Return on capital employed

Results and Discussion

Table 7 shows the descriptive statistics and correlation results among the constructs used in the study. The results show that there are significant correlations between some of the research constructs. Differentiation strategy significantly correlated with technological resources and capability ($r = 0.346$, $p<0.01$), financial measure of performance (ROCE) ($r= -0.345$, $p<0.01$) as well as cost-leadership ($r = 0.209$, $p<0.1$). This could be accounted for by the fact that many construction organisations are differentiating their services and products through innovations and quality, thus becoming cost leaders in the construction market. Differentiation-cost leadership strategy or hybrid strategy gives firms the opportunities of introducing innovative dimensions which can enhance a firm's specialisation in providing the needs of the segment with lower investment in resources which lead to higher performance (Parnell, 2013; Pertusa-Ortega, 2007). It can also be inferred that organisations that identify their strengths technologically or possess better technology tend to differentiate themselves better to achieve superior performance.

Although, the relationship between financial measures of organisational performance is significant, it is negatively related to differentiation strategy. This result support the conventional assertion that organisations that pursue differentiation strategy tend to place high premium on the use of non-financial measures of organisational performance (Govindarajan & Gupta, 1985; Hoque, 2004; Porter, 1980). Human resources and financial resources show insignificant correlation with competitive strategies as well as the measures of performance. This is consistent with the findings of Newbert (2007), that the relationship between capabilities/resources and organisational performance may be inconclusive if the mediating

role of competitive strategy is not explored. Therefore, the lack of correlation between the measures of organisation resources and capabilities lend support to hypothesis 3.

Table 8 indicates the relationship between competitive strategies and organisational performance. From Table 8, model 1 tests the degree to which use of the three strategies predicted the ROCE measures of performance and the model has a predictive ability of 15.8 % ($R = 0.397$; $R^2 = 0.158$; F-model =4.242, $p = 0.01$). The results of model show that cost-leadership has positive significant relationship with ROCE while differentiation strategy showed negative but significant link with ROCE. Model 2 indicates the results of regressing competitors' effectiveness measures on the competitive strategies. As shown in Table 8, the model has a low predictive power of 1.7% ($R = 0.131$; R2 = 0.017; F-model =0.396, $p \neq 0.05$). The results of regressing objective achievement on the competitive strategies are reported in model 3 on Table 8. Model 3 has a predictive power of 5% ($R = .224$; $R^2 = 0.050$; F-model.193, $p = 0.027$).

Table 8: Regression analysis result between strategy and performance measures

	ROCE	Competitive analysis	Objective achievement
Independent Variables	Model 1	Model 2	Model 3
Differentiation	-.388***	.020	.106
Cost-leadership	.200*	.109	.156
Focus	.013	.051	.062
R	0.397	0.131	0.224
R 2	0.158	0.017	0.050
Δ F	4.242**	0.396	1.193

Note: ROCE- Return on capital employed; *p<0.10; **p<0.05; ***p<0.01

The results our Models 2 and 3 which use quasi-objective and fully subjective measures do not support Kaplan and Norton (2001) and Hoque (2004), who found that that non-financial measures are better predictors of organisational performance. However, the findings of model 1 was consistent with previous studies that have related financial measures of organisational performance to competitive strategies (Gosselin, 2005; McAdam & Bailies, 2002; Teeratansirikool *et al*., 2013). Based on the deductions from the regression results, hypothesis 1 cannot be totally rejected as competitive (differentiation and cost-leadership) strategies are significantly associated with at least one (ROCE) of the measures of organisational performance. None of the strategies is significantly associated with the non-financial measure of performance. This supports the findings of earlier studies by Teeratansirikool *et al*. (2013) who found significant relationships between financial measures of performance and differentiation strategy, and the studies reported by Gosselin (2005), Olson and Slater (2002) and Simons (1987), who established that cost-leadership organisations place high emphasis on financial measures of performance.

Table 9 shows the result of mediated hierarchical regression conducted to test the study's hypotheses. Mediated hierarchical regression analysis was utilised to isolate the direct or main effect of organisational resources and capabilities on performance and to individually examine how competitive strategies mediated the relationship between organisational resources and capabilities and performance. The study applied the same method to examine this relationship for each of the response variables (ROCE, Objective achievement and competitor's

effectiveness) following three steps. However, the order of variable entry is determined by the researcher before the analysis is conducted based on theory and logic from the literature (Lewis, 2007). In the first step, the three measures of resources and capabilities were regressed against each of the dependent variables. No significant effect was noticed between the constructs and the models (model 1 for each of dependent variables) were also insignificant at either $p<0.05$ or 0.1. In step 2, the three measures of competitive strategies were included to investigate the effects of strategies on the strength of relationship between resources and capabilities and organisational performance. Significant effect at this point would indicate competitive strategies have mediating effects on their relationships. In step 3, the study examines the influence of organisations size and years of operation (age) on the relationship between the predicator and the response variables.

Table 9: Main and mediating effects of competitive strategies od resources/capabilities and performance

	ROCE			**Competitor's effectiveness**			**Objective achievement**		
Independent variables	Models			Models			Models		
	1	2	3	1	2	3	1	2	3
Financial resources	.124	.084	.018	-.005	.003	.022	-.032	-.001	-.004
Human resources	-.047	-.099	.013	-.052	-.038	-.025	.112	.162	.160
Technological resources	.132	.289**	.047	.085	.071	.062	-.036	-.125	-.126
Differentiation		-.486***	-.126		-.007	-.011		.162	.165
Cost-leadership		.181	.110		.102	.057		.175	.181
Focus		.017	-.093		.050	.076		.067	.062
Log Size			2.404***			-.270			.061
Log Age			-1.873***			.651			-.114
R	.182	.488	.828	.092	.148	.420	.112	.284	.290
R^2	.033	.238	.686	.009	.022	.176	.013	.081	.084
ΔR^2	.033	.205***	.447***	.009	.013	.154***	.013	.068	.003
ΔF	.781	5.838***	44.817***	.196	.243	5.892***	.289	1.610	.110

Note: ROCE- Return on capital employed; *p<0.10; **p<0.05; ***p<0.01

From the first step in Model 1 for the dependent variables, all the three models were statistically insignificant. This is evident in the values of the model's R^2 and lack of significance between the predicator and response variables. With respect to model 2 for all the dependent or response variables, when measures of competitive strategies were introduced to examine their mediating effects on the relationship between resources and capabilities and organisational performance, only Model 2 regressed with financial measures of organisational performance showed significance in R^2 values (R^2 change from 3.3% in model 1 to 20.5%, $p<0.01$). Differentiation strategy and technological resources showed statistically significant regression coefficient, however, this significant effect disappeared when the control variables were introduced as shown in Model 3 (ROCE) but with significant R^2 change values (ΔR^2 from 20.5% to 44.7%, both significant at $p<0.01$). Model 3 for competitor's effectiveness was also significant when controlled by natural log of organisations size and age with R^2 change values (ΔR^2 from 0.9% in model to 1.3% in model 2 and 15.4% in model which is significant at $p<0.01$). The results from the regression analysis show that Competitive (differentiation) strategy mediate in the relationship between resources and capabilities and financial measures of organisational performance, and that demographic data (size and age) impact on the nature of the relationship.

These findings give support to the hypothesis 2 that there is no direct relationship between resources and performance. It also confirms hypothesis 3 that strategy mediate in the relationship between resources and capabilities and organisational performance, though only differentiation strategy was found to be significantly related. This is consistent with Chew *et al*. (2008) who argue that organisational resources organised into capabilities need to align with suitable strategy to achieve superior performance. Previous studies by Spencer *et al*. (2009) also supports the findings of this study that there is an association between an organisation's strategic emphases on differentiation and organisational performance through the mediating effect of financial measures of performance.

From the findings of this study, it emerged that differentiation and cost-leadership strategies are the strategies in use in South African context and they were found to have different effects on organisational performance. Also, the study results suggest that technological resources are the major resources for the organisations trying to pursue cost-leadership or differentiation strategy. The prevalence of these types of strategy should not come as a surprise, as default strategies in the construction industry according to Dikmen and Birgonul (2003) revolves around lowering cost and differentiation. Organisations pursuit of differentiation strategy (by placing high emphasis on quality or other innovative construction activities) may be done in an attempt to increase their market share. This type of strategy is required or useful when the organisation is a technological leader. However, Spanos *et al*. (2004) posit that organisations that utilise differentiation strategy are found to be less profitable in comparison with organisations that do not have a clear strategy. This might be applicable in the South African context considering the negative relationship found to exist between differentiation strategy and the financial measures of organisational performance.

Cost-leadership on the other hand is the conventional strategy being used by organisations in construction industry to win tenders and mostly employed as key comparative advantage over their competitors in the industry. The study findings provide partial support to the assertion of Spanos *et al*. (2004) who found that combination of differentiation and cost-leadership can result in an above average performance due to the significant correlation between the two, but does not reveal that their pursuit in pure form will lead to poor performance. The divergences may be as a result of industry-specific characteristics which distinguish construction industry from other industries. This is because organisations are selected based on lowest responsive tender (cost), while the two strategies (differentiation and cost-leadership) appear to be very useful when combined with appropriate technological resources. Furthermore, the lack of a significant relationship found to exist between focus strategy and organisational performance may be due to the fact that organisations can capture market niches by pursuing either cost-leadership or differentiation strategy (Price *et al*., 2003).

This paper presents notable findings for the management of construction organisations. It first precipitates some strategic attributes that can assist organisations benefit from continuous improvement in their performances when combined effectively. It also reveals that cost-leadership strategy could be used by the management to gain considerable market share and later differentiate the company products to enhance competitive advantage. It can be inferred from this study that when organisations pursue cost-leadership, differentiation strategy or combination of both with appropriate technological resources higher performance is possible. The implication of this study for the management of construction organisations is that differentiation appears to be the most suitable strategy, but managers should be aware that it

comes at a cost. Therefore, organisations trying to differentiate should realise that organisations resources have to be consistent with the strategy and probably followed by cost reduction measures as cost is the basis for selecting organisations within the study context.

CONCLUSIONS

The main objective of this study is to examine the mediating role of competitive strategies on the strength of relationship between resources and capabilities and organisational performance. Hypotheses were formulated based on evidence from literature and the hypotheses were tested using linear and hierarchical mediated regression analysis. Cost-leadership and differentiation strategies were found to exhibit different significant effects on financial measures of organisational performance. Differentiation strategies were found to have significant mediating effects on the relationship between resources and capabilities on performance. These results provide partial support for the study hypothesis as not all measures of organisational performance show significant relationship with strategies and resources.

The current research contributes to the discourse on strategic management in construction in significant ways. Foremost, the result provide evidence that multiple measures of organisational performance are essential in evaluating the achievement of overall organisational objectives. Secondly, the study extends the research on competitive strategies in construction by examining the mediating effects of strategies on resources, capabilities and performance. In this light, the study reveals that differentiation and cost-leadership appear to be the prevailing strategies in the South African construction market that contribute to organisation competitiveness. The findings presented in this paper have drawn attention to the significance of resources/capabilities and competitive strategies in ensuring that organisations perform above optimal level in the construction business environment. Specifically, the research provides a better understanding of how both financial and non-financial measures of performance may play an important role in improving the performance of an organization. The managerial implication of these results is that resources/capabilities and competitive strategies are key determinants of organisations performance, and that construction business managers need to understand the need to combine appropriate competitive strategies and resources in order to respond to external threats and changes in the business environment.

The results of the study have implications which may contribute significantly to current debate on the nature of competitive strategy or competitiveness of construction organisations in Africa or in the context of developing economies. The contributions should be assessed in the light of some study limitations. For example, the data used in this study was obtained from large construction organisations using a cross-sectional survey approach to data collection. Therefore, the results may not be generalizable to explain relationships within small construction organisations. Future studies which explore these limitations and examines the influence of business environment on strategy vis-à-vis performance and resources should be undertaken to validate the results obtained in this study.

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