

FINANCIAL MANAGEMENT STRATEGIES THAT INFLUENCE PROJECT AND ORGANISATION PERFORMANCE

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The study examines the financial management strategies used by construction organisations and whether these approaches result in competitive advantages, and improved project and organisational performance. The grounds for the examination stem from arguments held by scholars that the type of financial management strategy used by organisations on construction projects affects performance and corporate sustainability. Also, there is limited research that explores how financial management strategies influence project and organisation performance. The study employs a systematic review of extant literature and employs a quantitative research approach. A questionnaire survey of construction companies listed in Grade 7 to 9 on the Construction Industry Development Board (CIDB) Register of Contractors was conducted to obtain information required to address the research objective. Using this approach, the study first of all developed a conceptual framework that linked the financial management strategies used by construction organisations on their construction projects, and the organisational performance of those construction organisations, from a systematic literature review. Thereafter, the data collected was analysed using the mean score, regression analysis, and Z-test. It emerged from the study that cash flow, leverage and liquidity are effective performance evaluation systems for the construction project and organisations in South Africa. It was also found out that budgeting, creditworthiness, risk management, review and evaluation are effective financial management strategies among the organisations surveyed; and that the financial management strategies used have a positive effect on project and organization performance. Therefore, the study concludes that construction organisations will perform better when a combination of financial management strategies are used in their operations. However, further studies using empirical validation are required to determine which of the financial management strategies in the construction industry best fits the need for construction businesses to deliver successful construction projects and improved organisational performance.

Keywords: budgeting strategy, creditworthiness, evaluation, risk management

INTRODUCTION

Globally, the construction industry comprises three distinct features (size and nature of its products - large and site produced by a craft-based workforce and dependent on local conditions; each project takes a relatively long time to produce and differs in size, shape and aesthetics; and demand for its products is mainly for investment of goods) that differentiates it from all other sectors of a nation's economy (Adeyemi,

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2004; Obiyan, 1989). Hillebrandt (1985) observes that the industry is vast, although exceptionally disjointed, varied and dispersed, with a predominance of small firms, a few medium-sized firms and a minimal number of large firms. The explanation for the range of companies in the industry is that it is easier to cross the threshold required to establish a construction enterprise by all types of entrepreneurs who are not proficient in the management of resources, have the technical know-how and financial means to manage a successful construction company (Windapo and Cattell, 2011; Obiyan, 1989); a situation that could lead to project failure and ultimately construction company insolvency.

Haupt and Padayachee (2016) posit that sound application of financial management strategy contributes to successful construction businesses. Oke *et al.*, (2016) posit that the accomplishment of any construction project relies significantly on the level of (financial) resources, organizational performance, and appropriate financial management strategies, the completion time set for the project and the managerial input of the relevant players involved. An adequate financial management strategy has been recognised as a critical success factor for any construction company for efficient delivery of the construction project (Singh and Lakanathan, 1992).

Strategy, in effect, is management's game plan for consolidating and strengthening the construction organisation's setting, satisfying customers, and attaining performance targets (Festus and Adeniran, 2013). In the contemporary economic market, a good strategy helps increase the competitiveness of construction businesses, guaranteeing a strong dominance of the enterprise (Nguyen, 2018). Strategy has been used to varying degrees in the construction industry as a tool for financial management and decision making (Odeyinka *et al.*, 2003; RICS, 2014). Bell (2003) describes financial management strategy as the capability of corporate organisations to develop from having the ability, to a level of gaining financial competence that may help them deliver their optimum performance.

Consequently, to inspire performance in construction projects requires effective and sound financial management approaches (Arditi *et al.*, 2000; Bell, 2003). The failure of construction projects and their association with financial hitches has thus placed financial management in the lead of many construction activity/business requirements (Mutti and Hughes, 2002). This has emphasised the importance of financial management strategies and management that has given rise to the development of numerous financial models for projects. Nevertheless, most of the current models are either project specific or do not discuss the significance of good financial management and its impact on the project and organisational performance, within the construction company. More also, as construction project activities become more complex, the construction organisation requires a better set of strategies to deal efficiently with the risks and challenges that face their operation.

This study examines the influence of financial management strategies - budgeting strategy, cash flow forecast/projection strategy, creditworthiness strategy, review and evaluation strategy, and risk management strategy on project and organisation performance. To do this, the paper first presents a systematic literature review of financial management strategies and its effects on project and organisation performance. After that, it outlines the research methodology used, it proposes a framework to understand the influence of financial management strategies on project and organisational performance, and validates the framework using empirical data. Finally, it presents the study findings and conclusion.

Effects of Financial Management Strategies on Project and Organisation Performance

Calvert *et al.*, (2003), Wang *et al.*, (2015), Haupt and Padayachee (2016) identified different types of financial management strategies (FMS) currently in use regarding the achievement of construction project and organisation performance namely: Cash flow forecast/projection strategy, budgeting strategy, creditworthiness strategy, risk management strategy, review and evaluation strategy.

Cash flow forecast refers to knowledge about the rates and fees, which affect expenses and revenue, together with their combined effect on the construction project cash balance. It serves as a cost-controlling tool during construction work stage (Hwee and Tiong, 2002). Budget is a control mechanism for construction organisation liquidity or availability of adequate cash. Creditworthiness as financial management strategy represents the inherent value of firms and construction businesses mirrored in their capability and willingness to realise their business objectives (Safi and Lin, 2014). Chang and Zwei, (2011) established that the risk management strategy reduces the chances of negative impacts on construction company business operations and performance. As a function of risk management, the positive effect of leverage on construction organisation value tends to be stronger when the financial quality of the construction company is better. Alfani and Zacharia (2013) concluded that review and evaluation strategy would help the construction organisations eliminate any inconsistencies happening in the future, based on their insight into their past financial performance, and therefore ensuring the achievement of the best value for the firm, by formulating a series of new strategies.

Performance of organizations and projects demonstrates an outcome which rests upon efficient construction plans that are carried out within completion time, within budget and to the required level of quality (Owolabi *et al.*, 2014); the measurement of a construction component, stakeholders, an organization and realization of the work outline; profitability, liquidity, productivity, sufficient cash flow, leverages, market share, order value, and meeting customer and employee satisfaction (Allen and Helm, 2006, Tucker *et al.*, 2015); and indicating the capacity of the technical expertise of an organization (Hatush and Skitmore, 1997).

Previous research by Odeyinka *et al.*, (2003) and Windapo and Cattell (2011) confirmed that the financial management strategies employed by a company impact on the project and company performance. Arditi *et al.*, (2000), and Wang *et al.*, (2015) posit that getting acquainted with financial management strategies (such as cash flow, appropriate debt management strategies which helps to develop the creditworthiness of companies, risk management, budgetary plan, review and evaluation), aids the decision-making process. According to Sheriff and Kaka (2003) the successful completion of a construction project hinges on the appropriateness of the financial management strategies aligned to the project features and constraints. Consequently, financial management strategies are the sine qua non to construction company and project performance.

Developing a Framework for the Relationship Between Financial Management Strategies (FMS) and Project and Organization Performance (P&OP)

Resource-based theory is adopted in this study. Resource-based theory submits that company resources and competencies impact on the growth and performance of the company (Mahoney and Pandian, 1992). Resources can be categorized as financial, physical, social, scientific, and organization (Grant, 1991). Barney (1991) posits that

the major impression about the resource-based view is that when the company makes use of better strategies such company will attain a sustainable competitive advantage and ultimate superior growth and performance if the company facilitates and relates them well. Wang *et al.*, (2015) postulate that getting acquainted with financial management strategies (such as payment of bills on time to the supply chain, appropriate debt management which helps develop the creditworthiness of companies and sustain company performance), will aid the decision-making process. The company in this study is described as a set of dynamic resources (financial) and administrative organisation.

As presented in Figure 1, five financial management strategies and six projects and organisation performance measures were identified from the literature. Figure 1 conceptualised a framework linking the FMS used by construction organisations to the six Projects and Organisation Performance (POP). The framework relationships show the influence of FMS on POP. First, the cash flow strategy has an impact on profitability, sufficient cash flow, and liquidity. This relationship is supported by Calvert *et al.*, (2003) and Melita (2019) who highlighted that the progress of any construction project depends mainly on sufficient cash flow and profitability. Also, Navon (1996) concluded that liquidity and sufficient cash flow are affected by cash flow strategies. A similar study by Mohammed *et al.*, (2014) validate this relationship.

The second relationship in Figure 1 links the budgetary strategy, profitability, sufficient cash flow, and liquidity. The investigation by Sur and Chakraborty (2011) provides support for this relationship. The budget represents a company's liquidity, evidence of sufficient cash, and a tool for making a profit (Defranco,1997). Therefore, any budgetary interests will influence the degree of liquidity, sufficient cash flow, and profitability of a project or an organisation (Harelimana, 2017). The third relationship identified in Figure 1 is the relationship between creditworthiness strategy, sufficient cash flow and leverage. Studies have shown that most construction organisations are not creditworthy because of inflation, interest rates, and insufficient cash flow (see Kangari, 1991; Berger and Frame, 2007). This confirms that the selection of creditworthiness strategy by construction organisations depend on its impact on leverage and sufficient cash flow (Visconti, 2013). The other relationships identified in Figure 1 are the impact of risk management on leverage, order value, and market share; and the impact of review and evaluation strategy on profitability, sufficient cash flow, and liquidity. Studies by Alfian and Zacharia (2013), Panayiotis (2018) and Sugiharto *et al.*, (2016) provide support for these relationships.

RESEARCH METHODS

The study formulated a framework illustrating the relationship between FMS and POP based on literature review in Figure 1. The effect and relationship between FMS and POP were evaluated using a structured questionnaire. The questionnaire was designed to elicit information such as level of FMS and POP in use from the respondents using a five-point Likert scale (where 1=very low and 5= very high). The choice of questionnaire survey in the study was informed by the need to explain the application of the resource-based theory in the context of financial management strategies used by a wide variety of construction organisations.

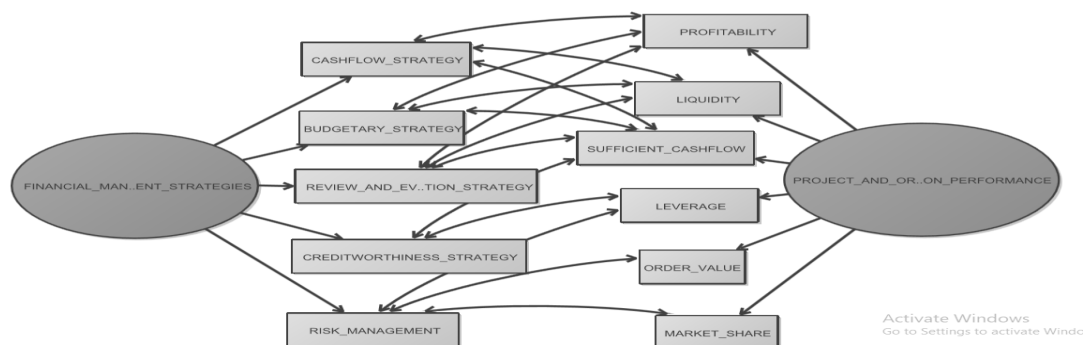


Figure 1: Framework of relationships between Financial Management Strategies (FMS) and Construction Project and Organization Performance (POP).

The study employs SurveyMonkey web-based platform in questionnaire administration. The ethical considerations in the study include keeping the respondents anonymous and reporting the responses in an aggregated format. The population for this study includes all 504 contractors listed in Grade 7 to 9 on the cidb Register of Contractors in South Africa. The survey was sent to 50% of the population equating to a sample size of 252. As at April 24, 2019, 47 responses were received, which implies a response rate of 18.65%.

The data collected from the respondents were analysed using Mean score, Regression analysis, and Z-test. Mean score was used to identify the common FMS and POP among respondents. Regression analysis was employed to test the effect of FMS on POP; While Z-test was conducted to validate the relationship between FMS and POP. The Cronbach alpha test for data reliability was used in confirming if the responses obtained were reliable. The Cronbach's coefficient obtained for this survey was 0.81, which indicated that the responses were reliable (Hair et al., 1998). The limitation of the study is that it is a preliminary study from an on-going PhD research. This will have an implication on the findings and conclusions of the study.

RESULTS AND DISCUSSION

Effects of Financial Management Strategies (FMS) on Project and Organization Performance (POP)

The responses of 47 respondents from an ongoing PhD research work was used to validate the relationship identified in the framework. The analysis of the respondents' profile shows that 53.19% of the respondents have a bachelor's degree, 25.53% have a Higher diploma, 12.77% have a Certificate, and 8.51% have N4-6/NTC certificate. For the designation of respondents, 70.21% of the respondents are in the Director cadre, 25.53% are in the Management cadre, and 6.38% indicated other designation. Only 29.05% of the respondents are Grade 7 contractors, 25.23% are Grade 8 contractors; while the majority of the respondents (45.72%) are Grade 9 contractors. For the class of work, 47.57 of the respondents are general building contractors, 47.43% of the respondents are civil engineering contractors; while 5.00% of the respondents are both general building and civil engineering contractors. The results show that information from the respondents will be reliable and unbiased owing to their educational qualifications and level of experience.

Firstly, the study sought to know the respondents' level of usage of the identified FMS and the level of POP. Data collected regarding this enquiry is presented in Tables 1 and 2. Table 1 shows that only sufficient cash flow (MS=4.09) has a high level of usage, while Leverage (MS=3.45) and Liquidity (MS=3.66) have an average level of

usage among the respondents. Profitability (MS=2.94), Order value (MS=2.83) and Market share (MS=2.32) are scored low among the respondents.

The results suggest that most of the respondents make use of sufficient cash flow, leverage, and liquidity as evaluation strategies for POP. Among the FMS presented for the respondents, only cash flow forecast has a low level of usage among the respondents (Table 2). Table 2 also shows that majority of the respondents employ budgeting (MS=3.89), creditworthiness (MS=3.32), risk management (MS=3.44), and review and evaluation (MS=3.52) as strategies for Financial management. The findings suggest that budgeting creditworthiness, risk management, and review and evaluation are common strategies that are being used as FMS. These findings corroborate the study by Haupt and Padayachee (2016) who identified these strategies as the common FMS.

Regression analysis was conducted to estimate the strength of the effect that FMS has on POP. The coefficient of determination ($R^2 = 0.408$) indicates that FMS used by the respondents explains 40% of the POP. The result suggests that FMS explains a low proportion of variability in POP. The correlation coefficient ($r=0.811$) indicates that FMS is positively correlated with POP. This suggests that the strength of the relationship between FMS and POP is such that as the FMS increases, the POP also tends to increase. The effect of FMS on POP is not statistically significant because the P-Value (0.24) is greater than the significance level of 0.005. Thus, suggesting that there is insufficient evidence to conclude that FMS influences POP.

Table 1: Means score of Project and Organisation Performance Evaluation Strategies

Project and Organisation Performance	Mean Score	Population mean	Variance	Standard deviation
Profitability	2.94	3.394	0.270	0.520
Sufficient Cashflow	4.09			
Liquidity	3.66			
Leverage	3.45			
Order value	2.83			
Market Share	2.32			

Table 2: Means Score of Financial Management Strategy

Financial Management Strategy	Mean Score	Population mean	Variance	Standard deviation
Budgeting	3.89	3.37	0.168	0.409
Review and evaluation	3.52			
Risk management	3.44			
Creditworthiness	3.32			
Cashflow forecast/Projection	2.75			

Validation of the Relationship Between Financial Management Strategies (FMS) and Project and Organization Performance (P&OP)

Z-test was conducted to compare the means and validate the relationships between FMS and POP. Eleven relationships were identified between FMS and POP (see Figure 1). The results in Table 3 show Z-test values for these relationships. Out of eleven relationships, only four relationships are statistically significant. These

relationships are cashflow forecast and liquidity (P=0.002), cash flow forecast and sufficient cash flow (P=0.000), review and evaluation strategy and sufficient cash flow (P=0.042) and creditworthiness and sufficient cash flow (P=0.009). These significant relationships are illustrated in Figure 2. The findings imply that the cash flow forecast strategy determines the liquidity and cash sufficiency of construction projects and organisations. Similarly, creditworthiness, review and evaluation strategies, influence the cash sufficiency of construction projects and organisations.

Table 3: Z-test of the relationships between FMS and ORP

Relationships	Mean difference	Z-test	P-value
CAS↔PRO	0.19	-0.574	0.282
CAS↔LIQ	0.19	-2.750	0.002
CAS↔SUC	1.34	-4.049	0.000
BUD↔PRO	0.95	0.003	0.500
BUD↔LIQ	0.23	0.004	0.500
BUD↔SUC	0.20	-0.604	0.272
REV↔PRO	0.58	0.006	0.500
REV↔LIQ	0.14	-0.423	0.336
REV↔SUC	0.57	-1.722	0.042
CRE↔SUC	0.77	-0.002	0.009
CRE↔LEV	0.13	-0.039	0.347
RIS ↔ LEV	0.01	-0.030	0.487
RIS↔ORD	0.61	-0.001	0.500
RIS↔MAR	1.12	0.000	0.500

CAS=Cashflow forecasting/projection strategy; PRO=Profitability; LIQ=Liquidity; SUC=Sufficient cashflow; BUD=Budgeting strategy; REV=Review and evaluation strategy; CRE= Creditworthiness strategy; LEV= Leverage; RIS=Risk management strategy; ORD= Order value; MAR= Market share.

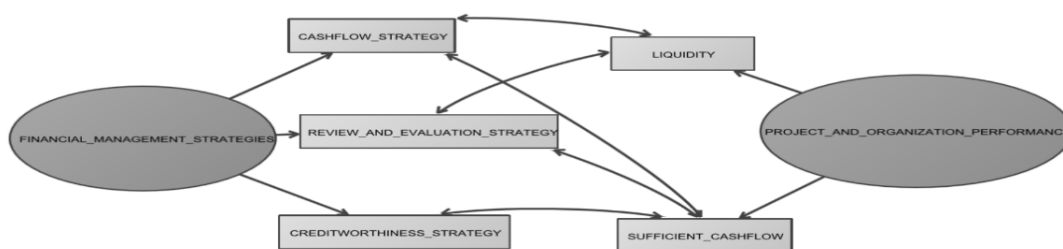


Figure 2: The Valid Relationships between Financial Management Strategies and Project and Organisation Performance

FINDINGS, CONCLUSION AND FURTHER RESEARCH

The influence of the financial management strategies - cash flow forecast/projection, budgeting, creditworthiness, risk management and review and evaluation, on the various types of project and construction performance is illustrated in Figure 1 using the categories of each type of financial management strategy. Six types of construction project and organisation performance were identified, namely profitability, liquidity, sufficient cash flow, leverage, order value and market share of the construction company. The validation of the identified relationships using

regression analysis and z-test indicate that only the relations between cashflow forecast strategy and liquidity, cashflow forecast strategy and sufficient cash flow, review and evaluation and liquidity, review and evaluation strategy and sufficient cash flow, and creditworthiness strategy and sufficient cash flow are valid. The valid relationships were illustrated in Figure 2.

The study also confirmed that sufficient cash flow, leverage, and liquidity are effective performance evaluation systems for projects and organisations in South Africa. Financial management strategies were found to have a positive effect on project and organisation performance. Lastly, budgeting, creditworthiness, risk management, and review and evaluation were found to be effective financial management strategies among the organisations sampled.

Based on these findings, the study concludes that success in today's competitive settings necessitates that a construction organisation employs budgeting, creditworthiness, review and evaluation, and risk management strategies in line with their growth plan, goal attainment and resource deployment. For example, if a construction organisation employs either budgeting strategy, risk management strategy, creditworthiness strategy or review and evaluation strategy to manage its finance, it would result in better performance in the area of sufficiency of cash flow, liquidity and leverage in the organisations and on construction project performance. The study recommends that further studies using empirical validation should be undertaken to determine which of the FMS in the construction industry best fits the need for construction businesses to deliver successful construction projects and improved organisational performance. Also, the interrelationships between the FMS and POP must further be investigated.

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