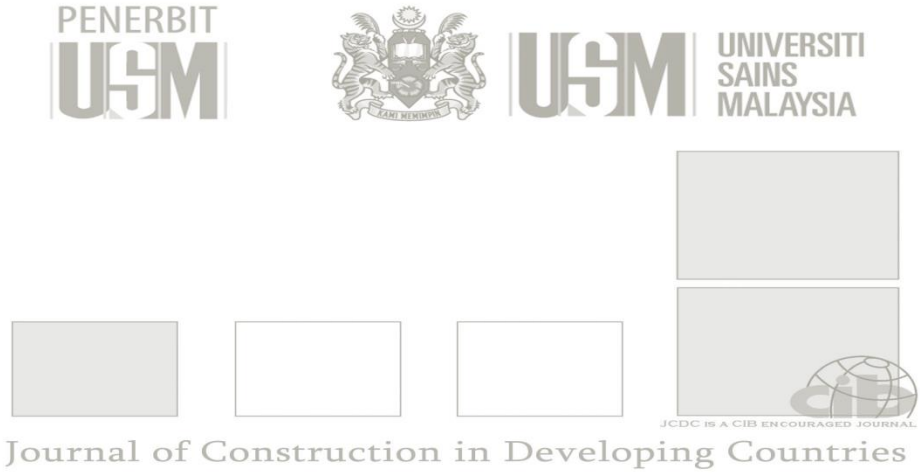

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Investigating Profitability of Local Construction Contractors in Uganda

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ABSTRACT:

Doubtlessly, the primary goal of every construction company is to maximise profitability. Without this, construction companies cannot survive. Incidentally, Ugandan local construction contractors (LCCs) continue to collapse in a short period, despite enormous public and private investments in the construction sector. This study investigates the profitability of LCCs in Uganda. An investigation was conducted to develop a regression model that would enable LCCs to enhance their profitability and minimise business failure. A questionnaire survey was conducted to collect primary data from 47 local construction companies registered with the Uganda National Association of Building and Civil Engineering Contractors (UNABCEC) and secondary data were collected from audited books of accounts covering 2016 to 2018. Thirty-five valid responses were received, representing a response rate of 74%. Data were coded into SPSS version 25, analysed, and displayed using the relative importance index (RII), statistical correlation, and regression analysis. The findings indicated that the profitability of LCCs was unsatisfactory when compared to the profitability ratios recommended for the construction industry and those of contractors in other countries. The results also indicate that the profitability of LCCs is significantly affected by the timeliness of payments, cost of finance, competitive bidding environment, project delays, price fluctuations and corruption tendencies, in that order. The findings of this study will benefit construction industry players by providing awareness about the factors affecting the profitability of LCCs. A regression model to enhance profitability was developed using regression analysis. This will help LCCs enhance their

profitability by developing mitigation strategies that prevent low profitability; consequently, business failure will be minimised.

Keywords: Business failure, Local construction contractors, Profitability, Uganda

INTRODUCTION

The construction industry is the cornerstone of developing economies because it underpins infrastructure development (Emanuele & Ntungire, 2018). Therefore, it has a multiplier effect on other sectors that rely on the infrastructure. Despite the importance of the construction sector, it faces stagnation and collapse of contracting companies. Business failure has been reported in both developed and developing countries; for instance, in the United States (Rajasekhar, 2017), the UK (Creditsafe, 2018), Nigeria (Oladimeji and Olugbenga, 2018), Rwanda (Kalamagye et. al., 2019), and Uganda (Ocen et. al., 2012).

Uganda's current development strategy is centered on the infrastructure and oil sector (IMF, 2019). This national strategy is reflected in the National Development Plan (NDPs II and III). Consequently, there are enormous public and private investments in the construction sector. However, nearly all construction projects in Uganda are executed by foreign companies because of stiff competition (Ocen et. al., 2012). Therefore, many LCCs in Uganda have closed businesses within a brief period of their operations. This situation resonates with Yan's finding, that profitability decreases as competition increases (Yan, 2018).

Business failure is a serious concern in the construction industry (Ibn-Homaid & Tijani, 2015) because it severely affects the economy. An example of this is the collapse of the Carillion, a prominent construction firm in the UK. As a result of low profitability and debt burden, Carillion left a public debt of £1.6m, a collapse of 2,700 subcontractors and suppliers, and over 43,000 workers unemployed (Amir & Simon, 2018).

Various researchers have linked low profitability to business failures in the construction industry. For example, Kalamagye, et. al. (2019), Mohammed (2016), El-Kholy and Akal (2019), and Mahamid (2012) reveal that financial causes lead to the failure of contracting firms.

Therefore, this study aimed to investigate the profitability of LCCs in Uganda and develop a regression model that would enable them to enhance their profitability and minimise business failure. The objective of this study is to evaluate the profitability of LCCs, establish factors that affect the profitability of LCCs, and assess the impact of these factors. These findings will further assist LCCs in developing a considerable and in-depth outlook on these factors. This will enable industry players to develop strategies that enhance the profitability of LCCs and consequently minimise business failure.

LITERATURE REVIEW

Business failure and profitability in the construction industry (Theoretical review)

According to Roza and Arditi (2019), low profitability is a major cause of

contractor failure. Toong and Igor (2017) provide empirical evidence that companies reporting low profitability are at an increased risk of failure. Various scholars in different countries have attributed contractor failure to low profitability in the construction industry; for instance, Creditsafe (2018), UK; Rajasekhar (2017), US; Ibn-Homaid (2015), Saudi Arabia; El-Kholy and Akal (2019), Egypt; Oladimeji and Olubeng (2018); Nigeria; and (Kalamagye et. al., 2019), Rwanda. Low profitability, which is evidently a major global issue, however has not been studied in Uganda, and therefore, literature on it is limited. The available literature on the collapse of contractors in Uganda attributes it to less competitiveness of LCCs in the sector (Ocen et. al., 2012). This finding resonates with Chappelow's (2019) argument that profitability decreases as competition increases. Therefore, competition, among other factors, contributes to low profitability and, consequently, business failure. The existing literature on contractor failure due to low profitability focuses on other countries. However, this cannot be applied directly to Uganda because of its parallel business environment. Therefore, it is necessary to investigate this area of study.

Several variables that affect the profitability of contractors have been established by previous studies, such as the timeliness of payments (Ansah, 2011; Hwee & Robert, 2002), project delays (Kikwasi, 2012), risk management (Samuel and Will, 2016), cost of finance (Balimwezo, 2018) and, (Emanuele & Ntungire, 2018) price fluctuations (Mishra and Regime, 2017), competition (Enshassi et. al., 2012), and corruption tendencies (Emanuele & Ntungire, 2018).

These variables affect profitability and, if not effectively managed, can lead to low profitability and business failure.

Failure to attain adequate profitability leads to several issues, such as failure to meet short-and long-term liabilities, inability to compete and win tenders, failure to meet contractual obligations, and, eventually, the company closes business. Whenever construction companies close, this results in unemployment, loss of income, supply chain uncertainty, public debt, the collapse of affiliated suppliers and sub-contractors, and a reduction in government revenue.

Relying on the above literature, the following theories informed the study: (a) Ugandan local construction contractors are collapsing because of low profitability; and (b) Uganda local construction contractors are earning adequate profitability and therefore do not collapse because of inadequate profitability. These theories were tested by (a) evaluating the profitability levels of LCCs in Uganda, (b) establishing the factors that affect the profitability of LCCs in Uganda, and (c) assessing the impact of factors affecting the profitability of LCCs.

Measurement of Profitability

Ibn-Homaid and Tijani (2015) stated that a construction company must evaluate its financial performance periodically so that the necessary and appropriate strategies can be put in place to maintain its survival. Leland and Anthony (2012) indicate that accountants, financial analysts, and engineering economists frequently use business ratio analysis to evaluate a company's

financial health over time with industry norms. They further recommended that it is necessary to compute ratios for several companies in the same industry for comparison purposes.

The ratios discussed by Leland and Anthony (2012) include solvency ratios, efficiency ratios, and profitability ratios. Furthermore, they discuss the purpose of these ratios as follows: solvency ratios assess the company's ability to meet short-term and long-term financial obligations; efficiency ratios measure the management's ability to use and control the company's assets; and profitability ratios measure the company's ability to earn a return for the owners of the company. Given the general objective of this study, profitability ratios were used to measure the profitability of LCCs.

Profitability Analysis

Profitability ratios reflect a firm's ability to generate profits as returns on the funds invested. In addition, they reflect a firm's competitive situation and management quality (Abdul 2017). Therefore, profitability ratios can assist in determining the failure or success of construction companies.

Nailal and Rika (2016) state that profitability ratios include gross profit margin (GPM), net profit margin (NPM), return on assets (ROA) and return on equity (ROE). For instance, Pamulu, et. al. (2007) used the GPM, OPM, NPM, ROA, and ROE to evaluate the financial ratios in Indonesia's construction industry. Alied (2015) and CLA (2018) analysed the profitability trends of contractors in the UAE and USA, respectively. Monica (2014) compared the profitability of two companies (SAIL and STATA Steel) using OPM and GPM. Tino, et. al.(2016) assert that ROA and ROE are the return ratios most commonly used

by investors.

The profitability ratios selected for this study are margin ratios (GPM, OPM, and NPM) and return ratios (ROA and ROE). Abdul (2017) defines GPM as the sale's ability to generate profit. In other words, the gross margin alone indicates the profit a company retains after paying off its cost of goods sold or direct costs. A high GPM reflects a competitive advantage arising from effective cost control and high quality. GPM is calculated as the ratio of net income to gross revenue. OPM establishes a relationship between operating profit and net sales (Anifowose & Babalola, 2018). A higher operating profit ratio means that the company can increase its sales and reduce its operating expenses, indicating good operational efficiency (Anifowose & Babalola, 2018). Nailal and Rika (2016) define NPM as the ratio of net profit after taxes to revenue. This reveals a company's ability to generate profits after taxes (Nailal & Rika, 2016). ROA measures a construction company's efficiency in utilising its assets (Ibn-Homaid and Tijani, 2015). A high percentage rate indicates whether a company is well managed and has a good return on assets. The ROE is the ratio of net income after taxes to capital (Nailal & Rika, 2016). In other words, it measures a company's equity shareholders' ability to earn a return on equity investments.

Strishcheck and McIntyre (2008) stress that financial ratios must be compared with the industry's recommended ratios over a long period. They also argue that these ratios have meaning and point to how the company has been run in the years of accounts. According to Halim (2010), if a firm's financial ratios vary significantly from the industry average, analysts should be concerned about why this variance occurs. Equally, management of the

company should be alerted to check for survival. Therefore, profitability ratios of LCCs were compared with ratios recommended for the construction sector as proposed by Peterson (2009) and those of contractors in other countries such as the USA (CLA, 2018); UAE (Alied, 2015); and Indonesia (Pamulu, et. al., 2007)

Factors that affect Profitability of contractors in the Construction Industry

The factors affecting the profitability of contractors were identified from the existing literature and classified into four categories: management factors, project-related factors, economic factors, and market factors.

Management factors

These factors affect profitability, which can be directly controlled by the company's management. Strishcheck and McIntyre (2008) attributed inadequate project management to financial difficulties among contractors. They assert that poor project management involves incompetent or untrained personnel; these personnel may fail to implement and monitor cost controls, or make uninformed economic decisions without clear justification and planning, which can consequently affect the company's profitability. Davidson and Maguire (2003) also link management deficiencies to business failure.

Otim, et. al. (2007) conducted a study on cost control techniques used on building construction sites in Uganda, and their findings indicated that rather than the methods, the problem lies in poor management of processes and laxity in supervision on most sites visited. Without effective cost management, contractors cannot sustain their long-term profitability. According to Amanuel and Muluken (2018), poor cost management and project cost overruns are

severe issues in developed and developing countries. Amanuel and Muluken (2018) discovered that inadequate financial planning and lack of effective and efficient project cost management systems are among the factors responsible for obtaining low profits.

Project factors

These factors are borne by the characteristics of construction contracts. According to Kikwasi (2012), construction project delays and disruptions are among the challenges faced during the execution of construction projects. Lee (2009) writes that it is essential for projects to be completed on time, and that the amount of liquidated damage is not high, as late completions offset profits.

According to Chandrashekhar and Ratnesh (2016), cash flow is the most important factor affecting the profitability of construction projects under execution. They also indicate that cash flow assumes even greater importance in modern construction businesses as companies handle many projects simultaneously, which necessitates precise planning for fund management. Late payment has been identified as one of the biggest challenges facing small businesses in the UK, with an estimated 50,000 companies failing each year because of late payments, leading to severe cash flow problems (Amir & Simon, 2018). Delayed payments are considered a significant factor, because they cause severe cash flow problems for contractors (Ansah, 2011).

Economic factors

Economic factors are variables borne by national economic conditions, including monetary and fiscal policies, the global economy's state, and

inflation. According to Emanuele and Ntungire (2018), the construction industry is a high-risk sector for financers because it often requires high fixed capital investments and incurs high sunk costs. The lack of access to finance is especially acute for local construction firms in Uganda, whose ability to borrow is limited by rigidities in the domestic market and a lack of collateral security. In addition, commercial banks' current high lending rates have led to increased business costs and ultimately slow business growth in Uganda (Nuwagaba, 2018). Nuwagaba (2018) further indicates that Uganda's commercial banks' lending rates are as high as 26%. Currently, the majority of competitors to LCCs are Chinese firms borrowing at interest rates as low as 3%. Consequently, LCCs are forced to unreasonably lower their profit margins to compete with foreign companies. Otherwise, foreign firms will continue to outcompete LCCs. Consequently, LCCs suffer financially and collapse.

Price fluctuations are defined by Mishar and Regmi (2017) as the rise and fall in prices of goods, materials, and services on the market. They further claim that a contractor who tenders at a fixed price runs the risk that he may later have to pay more for materials and labor than the prices and wages current at his tender time. Conversely, the contractor may benefit if the prices and wages decrease. Anjay and Ujjal (2017) discovered that Nepalese contractors lose at least 52% of their expected profit because of price fluctuations in construction inputs. Therefore, this risk price must be considered at the pre-tender stage, but also monitored post-contract.

Market factors

Market-related factors are variables resulting from the industry forces of

demand and supply and the nature of practices in the industry. Lee (2009) claims that construction contractors worldwide have been forced out of business, primarily because of a highly competitive bidding environment that has resulted in relatively low profitability and even significant losses. An example is Gaza strip where the construction industry is dominated by a competitive construction sector driven by an inferior cost mentality. This created a lot of pressure on contractors to reduce pricing during the bidding process for construction contracts, pushing them on the edges of the already worse economic times, resulting in losses in due course (Enshassi et. al., 2006). Uganda is no exception; Ocen et al. (2012) confirmed that construction businesses in Uganda closed or changed the business in a short time due to the low competitiveness of LCCs.

Emanuele and Ntungire (2018) claim that corruption is the leading friction in doing business in Uganda. Therefore, the cost of doing business is high for companies that rely on government jobs. There are several reasons why sectors, such as construction, are prone to corruption. Construction is highly dependent on public procurement. Coupled with sizable contracts, this gives public officials and consultants many lucrative opportunities to illegally solicit money from contractors.

METHODS

Research Design

The survey strategy of inquiry was selected because the characteristics of this study resonated with the assertion that surveys mostly use questionnaires, interviews, and observations for data collection (Abdulai & Anash, 2014).

Research Approach

A mixed research methodology was selected for this study because it involved qualitative and quantitative research design approaches. The characteristics of quantitative research forming part of this study included: it was an inquiry into a social problem based on testing a theory composed of variables, measured with numbers, and analysed using statistical procedures to determine the predictive generalization of the theory; it viewed truthfulness, which could be measured; the researcher remained distant and independent of the investigation to ensure objective assessment of the situation; the variables were chosen before the study began and remained fixed throughout the study; questionnaires with closed-ended questions were used to collect data, and inferential numerical analysis of data was carried out using the SPSS statistical software package. The qualitative research methodology that formed part of this study included interviews used for primary data collection.

A qualitative approach was incorporated in this study to focus on the meaning of the collected data rather than simply quantifying the phenomena. This enabled the researcher to gather in-depth knowledge of the research topic, which assisted in making judgments on the quantitative data collected. Structured interviews with open-ended questions were used to collect data. All data collected from the interviews were recorded using a cell phone (I-phone 8), later reproduced on paper, conceptualised and categorised according to the research objectives, then entered into MS-Excel and analysed using content analysis, and interpretations were made of the data.

Research Population

The target population for this study comprised company representatives with knowledge about a company's profitability, namely, directors, project managers, quantity surveyors, accountants, administrators, and procurement managers from different construction companies. Each construction company appointed a single representative from the list above to participate in this study. Appointments were made based on the availability and experience of respondents. The companies that participated in this study were those registered with UNABCEC as local civil and building engineering contractors under various classes: A-1 local, A-2, A-3, A-4, and A-5. Contractors registered with UNABCEC were classified according to their estimated annual volume of work, area of specialty, and nationality, as shown in Table 1.

Sampling Strategy

Stratified sampling was used because the study population comprised small strata based on the contractors' annual volume of contracts, area of specialty, and nationality, classified under different categories. The sample size of the entire population of contractors was determined using Yamane's formula to calculate the sample size of a finite population (Yamane, 1967). Yamane's formula was appropriate because the population of local construction contractors registered with the UNABCEC is known.

Yamane's Formula calculating sample of a finite population is:

$$n = \frac{N}{1+N(e^2)} \quad (1)$$

where n is the sample size, N is the population of the study, and e is the level of precision. The sample size of the entire population was as follows:

sample size $(n) = \frac{89}{1+89(0.1^2)} = 47$

Owing to the nature of the study population, a sample fraction in each stratum (n_i) was determined. The proportional allocation method was used to determine sample fractions for each stratum. The formula for proportional allocation method is : $n_i = n\,\frac{N_i}{N}$ (2)

where: n_i is the sample fraction of i^{th} strata; n is the sample size of the entire population; N_i is the population size of i^{th} strata; and N is the population size of the study. For instance, the researcher applied equation 2 to class A-1 locals with a sample size of the entire population (n) of 47, population size of i^{th} strata (N_i) of 13, and population size (N) of 89, as illustrated. $\text{Same fraction } (n_i) = 47\,\frac{13}{89} = 6$. The same equation applies to all the other strata, as indicated in Table 1. After determining the sample fractions, systematic sampling was used to identify the contractors that formed a part of the sample fraction from each stratum.

Stratum	Class	Annual Volume of work (UGX)	N_i	(n_i)
1	A-1 Local	> 10 billion	13	6
2	A-2	>5 billion but ≤10 billion	15	8
3	A-3	>2.5 billion but ≤ 5 billion	9	5
4	A-4	> 500 million but ≤2.5 billion	22	12
5	A-5	≤ 500 million	30	16
	Total		**89**	**47**

Table 1. The sample fraction of the study population

Description of the Study Area

The study was carried out in Uganda's Greater Kampala Metropolitan Area because 96% of the sample population operated in this area.

Data Sources

Primary data collection was conducted between October 2019 and January 2020, using questionnaires and interview guides. On the other hand, secondary data collection instruments included: published journals, books, published reports, online materials, and company annual financial statements for three years (2016-2018).

Data Collection Instruments

Data on the profitability of LCCs were obtained from audited annual financial statements for the period from 2016 to 2018. The median was used as a statistical measure of profitability ratios because it is not skewed by a small percentage of large or small data and therefore provides a better representation of a typical value. Then, the profitability ratios of LCCs in Uganda were compared with the ratios recommended for the construction industry and those for contractors in other countries, that is, the UAE, Indonesia, and the United States, in order to compare and provide justifications for the variance in the data. Structured questionnaires and interview guides were used to collect data on factors affecting the profitability of LCCs in Uganda.

Data Quality Testing

There was a need to explicitly link the data collection instruments to the research objectives. Therefore, a pilot study was conducted to remove errors and irrelevant questions from the questionnaire so that respondents would not

experience difficulties in completing the tools. In addition, a preliminary analysis with the supervisors was also carried out to determine whether the wording and format of questions would present difficulties when the main data were collected and analysed. This trial involved testing the wording of the questions, identifying ambiguous questions, testing the data collection procedure, and measuring the effectiveness of invitations to respondents.

Validity of the questionnaire

Content validity was conducted to determine the feasibility of the content being supplied to respondents if the tools answered the questionnaires and fulfilled the research objectives. Content validation was performed per objective and the results are presented in Table 2. Yusoff (2019) recommended that the acceptable values of the content validation index should range between 0.78 and 1; the closer to 1, the better and more satisfactory. Therefore, with an average content validity index of 0.983, the content in the questionnaires is believed to be valid, and hence provides accurate information for the investigation.

Parameter	**Item - Content Validity Index (CVI)**
Questions about factors affecting profitability of LCCs in Uganda.	0.978
Evaluation of LCC's profitability	0.988
Average CVI	**0.983**

Table 2. Content Validity of the questionnaires

Reliability of the questionnaire

An internal consistency technique using Cronbach's alpha (a) was applied to measure the reliability of the data-collection instruments. Cronbach's a is the

coefficient of reliability that provides an unbiased estimate of data generalisability. Table 3 shows the Cronbach's alpha values for each filled section of the questionnaire. The average Cronbach's alpha value was 0.813 for the entire questionnaire, indicating good reliability of the whole questionnaire. Therefore, the questionnaire was considered valid and reliable, and was distributed to an

acceptable population sample sizes. A reliability coefficient (alpha) of 0.70 or higher, is considered acceptable reliability in SPSS. (Bougie & Sekaran, 2010)

Parameter	**Cronbach's Alpha**
Questions about factors affecting profitability of LCCs in Uganda.	0.862
Evaluation of LCC's profitability	0.763
Average	**0.813**

Table 3: Cronbach's Alpha reliability analysis for the questionnaires

Data Analysis

A combination of MS Excel and SPSS 25 was used to analyse the quantitative data to answer the research questions. In addition, regression analysis was used to measure the relationship, strength, and direction of the variables, and to test the significance of the variables using correlation. Tables, bar graphs, and pie charts were used to present the analysed data for clarity. In addition, content analysis was used to analyze the qualitative data.

RESULTS AND DISCUSSION

Response Rate

Questionnaires were administered among 47 LCC in Uganda. Thirty-five (35) usable responses were received, representing a response rate of 74.3 %. The recommended response rate ranges from 60% to 80% (Creswell and Creswell, 2018). Therefore, the response rate was considered acceptable.

Evaluation of Profitability of LCCs in Uganda

Profitability of Ugandan LCCs from 2016 to 2018

Profitability ratios were computed based on the financial data collected from the LCCs. The ratios were then compared to Peterson's median and the range recommended for the construction industry (Peterson, 2009). In addition, the ratios were compared with those of contractors in other countries such as the USA (CLA, 2018), UAE (Alied, 2015) and Indonesia (Pamulu, et. al., 2007). Profitability ratios analysed in this study include GPM, NPM, OPM, ROA, and ROE, as shown in Table 4.

Profitability Ratios	2016	2017	2018
GPM	8.45%	8.31%	8.12%
OPM	5.60%	5.58%	5.53%
NPM	6.93%	3.63%	3.70%
ROA	3.02%	3.65%	3.46%
ROE	7.27%	7.66%	10.27%

Table 4. Profitability of LCCs in Uganda from 2016 to 2018

All profitability ratios are below the recommended industry ratios. Additionally, they steadily decreased over the years studied, except for ROA. The reduction in GPM suggests that contractors spent much on construction costs and acquired a lot of debt during that period, whereas a reduction in OPM suggests that LCCs do not effectively control their direct costs. In addition, this indicates that LCCs are less competitive in the sector. Therefore, LCCs need to improve their management strategies to enhance profitability. Low NPM implies high tax rates and dependence on debt. The proposed remedy is to enable easy access to cheaper financing, improved commercial management, and a reduction in taxes on LCCs. The ROE was higher than the ROA, amidst the low-profit margins reported. An ROE lower than the industry-recommended average signifies that LCCs are not able to generate reasonable and acceptable returns for their equity shareholders, while a low ROA indicates that contractors do not utilise their assets well. This indicates that LCCs managed their assets inefficiently and possibly relied more on borrowed capital, which substantially affected their financial performance. The profitability of LCCs was compared with that of contractors in the USA, Indonesia, and UAE. The findings show that contractors in these countries performed better than LCCs in Uganda. These findings concur with the

assumptions of the study that LCCs earning inadequate profitability contribute to business failures. Therefore, there is a need to develop strategies to enhance the profitability of LCCs and minimise business failures.

Factors Affecting Profitability of Local Construction Contractors in Uganda

Relative importance index (RII) was used to determine the most significant factors affecting the profitability of LCCs in Uganda. The results are presented in Tables 5 to 8.

Management factors	**RII**	**Rank**
Project cost management	0.8190	1
Project management	0.8095	2
Risk management	0.8095	2
Business strategy	0.6571	4
Profit strategy	0.6476	5
Average	**0.7485**	

Table 5. Management factors that affect profitability

Project factors	**RII**	**Rank**
Timeliness of payments	0.9810	1
Project delays	0.9048	2
Accuracy of bid estimates	0.8190	3
Change in scope	0.7619	4
Site productivity	0.7429	5
Average	**0.8419**	

Table 6. Project related factors that affect profitability

Economic Factors	**RII**	**Rank**
Cost of finance or capital	0.9238	1
Price fluctuations	0.8952	2
Changes in Tax legislation and regulatory ordinances	0.8381	3
Average	**0.8857**	

Table 7. Macroeconomic factors that affect profitability

Market factors	**RII**	**Rank**
Competition	0.9333	1
Corruption tendencies	0.8667	2
Experience of the contractors	0.7810	3
Supply and demand	0.7524	4
Average	**0.8334**	

Table 8. Market-related factors that affect profitability

Table 5 presents the results that stipulate project cost management, project management, and risk management as management factors that remarkably affect LCC profitability. On the other hand, the business strategy and profit strategy were considered inconsequential because their RII values were below the average RII value of 0.7485. Otim et. al. (2007) concur with the findings of the study that cost control techniques are not the problem, but the project cost management of the techniques that sparks all the rise in cost overruns, resulting in low profitability. Table 6 presents the findings that revealed the timeliness of payments as the most significant project factor, followed by project delays. Amir and Simon (2018) support the finding that late payment is one of the biggest challenges facing small businesses in the UK, leading to the collapse of approximately 50,000 companies per year. Similarly, Ansah (2011) found that the timeliness of payments is the most influential and significant factor affecting contractors' profitability, as it causes several cash flow problems for contractors. The results in Table 7 show that the cost of finance and price fluctuations were significant economic factors affecting LCC's profitability. Finally, Table 8 indicates that a competitive bidding environment and corruption tendencies were significant market factors affecting LCC profitability. Lee (2009) supports the findings of this study that construction contractors worldwide have been forced out of business, mostly because of a more competitive bidding environment that resulted in relatively low profitability and even significant losses. These factors require measures to mitigate low profitability and, consequently, business failures.

Themes generated from interviews

In analysing the interview data, three themes materialised, which are discussed in this section. These include factors that cause divergency in targeted profitability, strategies that LCCs have in place to minimise low profitability, and recommendations made to enhance the profitability of LCCs.

The interview data revealed that divergence in the profitability of LCCs is a recurrent problem, and contractors are willing to develop strategies that will assist in minimising it. The data indicated that LCC profitability is affected by project delays, timeliness of payment, poor project cost management, stiff competition, poor risk management, inflation, high cost of capital, and corruption tendencies. Deborah (a Quantity Surveyor) suggested that profitability is significantly affected by project delays. She discussed this factor "when a construction project is delayed by the contractor, the project overheads increase beyond cost targets and eventually erode the anticipated profit." Therefore, she suggested that contractors should ensure that realistic work schedules are prepared and monitored during construction to avert this problem. She also pointed out poor project management practices, such as employing incompetent staff, changing key staff during the project, and a tendency of management not to act on recommendations made by the technical team on matters of project management. Peter (Project Manager) expressed that the timeliness of payments has a great impact on the profitability of LCCs because it affects their cash flow and time value for money, but may also lead to an increased cost of capital when the contractor

has borrowed funds to finance the project. He suggested that LCCs should ensure alternative sources of income to support their cash flow in the case of delayed payments. The factors revealed by the interviews were correlated with those identified by the questionnaires. Other factors were also revealed, such as reworks, high cost of bidding and delays in the delivery of materials. However, these can also be related to project management.

LCCs claim to have put strategies in place to mitigate low profitability, including the use of competent project managers, proper project planning and management, cost control and management systems, motivation and skilling of laborers to improve efficiency and productivity, and the formation of joint ventures to enhance their capacity. However, these efforts are curtailed by the following limitations: lack of good cash flow to support company systems and project management tools, unfavorable government policies, delayed payments, and few clients who appreciate quality and corruption by government agencies.

Literature review data also revealed some recommendations to improve the profitability of LCCs, including the need to have government policies that protect local construction contractors from competition by international companies, reduction on taxes and statutory fees levied on local construction companies, funds put up by the government to facilitate easier access to financing at favorable interest rates, the government enforcing reservation schemes according to the prevailing procurement laws and the local content Act of 2019, and ensuring timely payments to LCCs, especially by the government, among others.

Regression Model to Enhance Profitability of LCCs in Uganda

Multiple regression analysis was used to validate the factors affecting LCC profitability. The significant factors were used in the model. SPSS version 25 was used to code and compute multiple regression analyses. A regression model was developed, verified, and validated to quantify confidence in the predictions produced by the model. A perfect model was extracted from SPSS, which included seven factors affecting LCCs' profitability, as displayed in Table 9, with the regression equation as follows:

PROF=1.660+0.217RM+0.811TP+0.749PD+0.792CF+0.400PF+0.776C+0.397CT

(3), where PROF = dependent variable (profitability of LCCs), RM = Risk Management, TP = Timeliness of Payments, PD = Project Delays, CF = Cost of Finance, PF = Price Fluctuation, C = competitive bidding environment, and CT = corruption tendencies.

The regression equation (4.1) reveals that, taking all factors constant (RM, C, CF, TP, PD, PF, and CT), the dependent variable profitability of LCCs is 1.660. As shown in Table 9, the timeliness of payments had the most significant impact on profitability of LCCs, indicating that a unit change in TP while holding RM, PD, CF, PF, C, and CT constant produces an increase in 0.811 units of profitability of LCCs. The study revealed that the timeliness of payment has the greatest impact on profitability, followed by cost of finance, competitive bidding environment, project delays, corruption tendencies, and risk management.

Coefficients				
Model	**Unstandardised Coefficients**	**Standardised Coefficients**	**T**	**Sig.**

		B	Std. Error	Beta		
1	(Constant)	1.660	0.049		2.833	0.012
	Risk management (RM)	0.217	0.038	0.111	3.352	0.024
	Timeliness of payments (TP)	0.811	0.062	0.467	3.600	0.000
	Project delays (PD)	0.749	0.056	0.255	3.261	0.001
	Cost of finance (CF)	0.792	0.054	0.352	3.192	0.039
	Price fluctuations (PF)	0.400	0.044	0.171	3.444	0.004
	Competitive bidding environment (C)	0.776	0.036	0.359	3.476	0.008
	Corruption Tendencies (CT)	0.397	0.051	0.182	3.591	0.001
a. Dependent Variable: Profitability of LCCs						

Table 9. Predictive model of factors affecting profitability of LCCs in Uganda

Model verification

The F-test was used to verify the model. The goodness of fit was calculated from the F-value, where the table of F-values was compared with the SPSS computed F-value (Kellie and Lemeshow, 2006). When the computed F-value > F-value is critical, then the model is adequate. From the F-value table, given a degree of freedom (df) of 7 and a specific alpha p-value of 0.05, as shown in Table 10, the F-value was 5.69. Compared with the computed F-value of 12.422, as shown in Table 10, the computed F-value is greater than the table F-value of 5.69, indicating that the model is adequate and relative to a perfect model.

ANOVA[a] model verification						
Model		**Sum of Squares**	**df**	**Mean Square**	**F**	**Sig.**
1	Regression	42.000	7	6.433	12.422	.000[b]
	Residual	62.721	30	0.321		
	Total	104.721	37			
a. Dependent Variable: Profitability						
b. Predictors: (Constant), Risk management, Timeliness of payments, Project delays, cost of finance, Price fluctuations, competitive bidding environment and corruption tendencies						

Table 10. ANOVA table for the model verification

Model fitness test

The regression equation and coefficient of determination R^2 were evaluated. The predicted and adjusted R^2 values were assumed to be in reasonable agreement (closer to each other). Higher R^2 values are desirable. The closer the predicted and adjusted R^2 values, the stronger the model and the better it predicts the response (Blaikie, 2003). In this model, as shown in Table 11, the value of R^2 was 0.882, which means the variance of 88% in profitability of LCCs is attributed to the selected factors in the study, with only 12% of the total variance not explained by the model, which may be due to other factors that have not been incorporated in the study. The value of the adjusted R^2 is 0.800, which is also higher, further supporting the significance of the model.

Model Summary to measure fitness of the model				
Model	**R**	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**
1	.728[a]	0.882	0.800	0.082

Table 11: Model Summary table to measure fitness of the model

Model validation

The developed regression model was validated using the split-sample approach. The data obtained from the questionnaires were coded in SPSS and split into 70% and 30% ratios, respectively. The model was re-run to determine its authenticity and whether it was perfect with normalized points instead of overfitted points. The study indicated a small difference between the actual and predicted R-squared values, as indicated in Table 12, which is a good indication that the model had good predictive ability. Therefore, the developed model is valid, reliable, and can be applied to LCCs to enhance

their profitability levels.

Actual R^2	Predictive R^2	Actual R^2– Predictive R^2	Remarks
0.882	0.816	0.066	Close
Actual Adj R^2	**Predictive Adj R^2**	**Actual Adj R^2– Adj Predictive R^2**	**Remarks**
0.800	0.789	0.011	Very close

Table 12: Model validation table showing the difference between the actual model and the split model

Application of the model

The model highlights the impact of the identified factors affecting the profitability of LCCs in Uganda. Timeliness of payments (y1) and project delays (y2) were measured in terms of days, while price fluctuations (y3) and cost of finance (y4) were measured in terms of percentages. the data derived from the regression equations is presented in Table 13.

Regression Equation	PROF =1.66+0.811x	PROF =1.66+0.749x	PROF =1.66+0.792x	PROF =1.66+0.4x
X	y1	y2	y3	y4
0	1.66	1.66	1.66	1.66
5	5.715	5.405	3.66	5.62
10	9.77	9.15	5.66	9.58
15	13.825	12.895	7.66	13.54
20	17.88	16.64	9.66	17.5
25	21.935	20.385	11.66	21.46
30	25.99	24.13	13.66	25.42

Table 13. Impact of significant factors affecting profitability

Table 13 shows that timeliness of payments has the greatest impact on LCCs' profitability followed by cost of finance, project delays and price fluctuations. This implies that the contractors' cashflow is very critical to the financial success of a construction company. This model will help LCCs to easily identify factors that have the most significant power in enhancing their profitability. By understanding where power lies, the model shall assist LCCs to identify their operational strengths, improve weaknesses, and avoid mistakes.

Also, the model will help stakeholders of the construction sector to understand the forces affecting profitability in the construction industry, and this can help inform decisions relating to whether to enter the construction industry; whether to increase capacity for the sector; and developing competitive strategies to enhance profitability and survival of LCCs.

CONCLUSIONS

This study evaluated the profitability of LCCs in Uganda and identified the factors affecting their profitability. It also determined the impact of these factors on profitability and developed a model for enhancing the profitability of Ugandan LCCs. According to the results, LCCs earn inadequate profitability considering the recommended construction industry profitability ratios and those of contractors in other countries. The timeliness of payments, cost of finance, project delays, and competitive bidding environment have the highest RII and, therefore, are the most remarkable factors affecting the profitability of LCCs in Uganda. In addition, a regression model was developed to enable contractors and industry stakeholders to identify factors that significantly affect the profitability of LCCs and develop strategies that will help to enhance profitability and minimize business failure. We recommend that further studies be conducted to evaluate financial performance using other financial ratios, such as solvency ratios, liquidity ratios, and activity ratios, to understand the general financial performance of LCCs in Uganda. In addition, further research is needed to determine the impact of company size and experience on profitability. This could reveal the strategies that experienced and big contractors use to ensure survival.

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