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An Analysis of Factors Determining the Viability of Locally Owned Construction Firms in South West Nigeria

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I. Introduction

Viability is the ability of a thing to maintain itself or recover its potentialities. Generally it means "Capacity for survival" and is more specifically used to mean a capacity for living, developing, or germinating under favourable conditions (Biomedicine, 2013). Viability study is conceptually perceived and measured in the business world by the long time survival of a business, and its ability to have sustainable profits, leverage, efficiency and liquidity over a period of time. If a business is viable, it is able to survive for many years, because it continues to make profits year after year. The longer a company can stay profitable, the better its viability (Jean, 2013).

Locally owned construction firms in Nigeria are faced with various limiting factors which negatively influence their viability. Olugboyega (1995) categorized these difficulty into three: the difficulty presented by the particular market and business involvement in which the contractor operates (Adams, 1997), difficulty derived from client and client's representative, and personal inadequacies of the contractor. In the same vein, Wells (1998) singled out inadequate construction capacity as a major problem to the viability of LOCOFs in developing countries. These are: the low levels of training and poor organisation in the construction industry, large number of very small and inefficient firms, lack of planning at all levels of the construction process and inadequate capacity and inefficiency in the building materials industries. Others include: lack of national construction firms offering bids for civil engineering projects, lack of capacity and "economic rationality" in design and construction and the production of building materials.

More recent identifications of problem affecting the growth of local construction firms by Bala *et al.* (2009) established a link between government policies, external and internal problems of firms. In addition, Aje *et al.* (2009) stressed the significant impact of management capability on the cost and time performance of building project. Oladimeji and Ojo (2012) observed that that the sum local contractors spent on fixed asset and their average profit was low although their average profit is higher than the UK margin on profit. Despite various literature bothering on the well being of local firms, there is still the need for regular identification and examination of factors determining its viability. This will enhance an up to date assessments of the firms and suggest better ways by which they can significantly contribute to the needed social and economic development.

II. Factors Influencing Locof's Viability

This paper identified 37 factors influencing the viability of construction firms from reviewed previous studies on construction business performance. Identified factors in studies on construction business financial management were: (1) cash for construction work (Wang e*t al.*, 2010); (2) construction profit margin (Halim *et al.,* 2010); (3) accessibility to building construction loan (Peterson, 2009); (4) interest on loan (Eyiah and Cook, 2003); (5) credit purchase of construction material (Peterson,2007); (6) cost of plant and equipment purchase, maintenance and hiring (Adams, 1997); (7) prompt payment of work certificate

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(Fatoye, 2012); (8) cost of construction labour (Graham, Smith, and Tommelein, 2005) and (9) cost of construction material (Wahab and Lawal, 2011).

Studies on management of construction operation had the following identified factors: (1) management of construction site material (Dey, 2001); (2) predictability of construction cost and time (Aje *et al.*, 2009); (3) management of construction site labour, plant and equipment (Edward *et al,* 2004) and (4) organisational competence and client satisfaction (Yu *et al.*, 2007). Factors identified in studies on construction business organisation factors were: (1) quality of service and works (El-Mashaleh *et al.*, 2007); (2) employee satisfaction (Nudurupati *et al.*, 2007) and (3) reputation of good client-contractor's relationship (Chinyio *et al.*, 1998). Studies on construction business firm's evaluation studies had the following: (1) age of operation (kale and Arditi, 1999); (2) firm size (Huang, 2009) and (3) firm's impact on the community (Bala *et al.*, 2009).

Construction business market environment studies identified the following factors: (1) tax (Abidali and Harris, 1995); (2) inflation (Semyalo, 2012); (3) corruption (Alabi, 2010); (4) construction work turnover and successful tender rates (Kangari *et al.*, 1992); (5) tendering practices (Kim and Reinschmidt, 2006); (6) government policy (Bala *et al.*, 2009) and (7) bad weather and natural disaster (Alinaitwe *et al.,* (2007)). Factor influencing viability identified in studies on construction business technical competence were: (1) construction technical expertise (Yu *et al.*, 2007); (2) quality of construction work and services (Wang *et al.*, 2010); (3) specialization of construction work (Koksal and Arditi, 2004); (4) advanced construction technology (Koksal and Arditi, 2004) and (5) number of high performing professionals (Ramirez *et al., 2004*). Finally, factors identified in studies on construction operation health and safety were: (1) incident rate (Odeyinka *et al.*, 2005); (2) accident cost (Fang *et al.*, 2004) and (3) availability of safety equipment (Lingard and Homles, 2001).

III. Methodology

Primary data were sourced from Locally Owned Construction Firms (LOCOFs) that were awarded building construction contracts between year 2005 and 2015 by Federal Universities and Federal University Teaching Hospitals in Southwestern Nigeria. Preliminary survey to this study showed that most prequalification exercises for construction contractors in this period started in year 2005. This period witnessed a significant improvement in funding of Nigerian tertiary institutions and improvement in university capital expenditure (Bamiro, 2012; Famade *et al.*, 2015). In addition, the period chosen for this study was also informed by the need to have the more recent and updated evaluation of LOCOFs.

The choice of federal teaching hospital and university institutions in Lagos, Ondo and Osun out of the six states was reached through the grouping of the states into three groups in order of contiguousness: Lagos and Ogun, Ondo and Ekiti, and Oyo and Osun state. Lagos was selected in preference to Ogun state due to its vast physical development, strategic location and very high concentration of infrastructural development. Ondo was selected in preference to Ekiti to represent one of the oldest states in the region and the Federal University located there is much larger and older than the Federal University in Ekiti state. Osun was selected in preference to Oyo to represent one of the newest states in Southwestern Nigeria.

There are 6 federal universities and 3 federal university teaching Hospitals in Southwestern Nigeria out of which only 3 federal universities and 2 federal university teaching hospitals are located in Lagos, Osun and Ondo states. These universities and university teaching hospitals are: University of Lagos (UNILAG) Akoka, Obafemi Awolowo University (OAU), Ile-Ife, Federal University of Technology Akure (FUTA), Lagos University Teaching Hospital (LUTH) and Obafemi Awolowo University Teaching Hospital Complex (OAUTHC). Specifically, the study surveyed the managing directors or their representatives and 2 other professional members of staff that had engaged in construction works in the institutions from year 2005 to 2015. Information from the institutions displayed in Table 1 indicated that there were 59 firms with 18 in UNILAG, 14 in OAU, 12 in FUTA, 5 in LUTH and 10 in OAUTHC. This brings the total number of expected surveyed firms' respondents to 177. However, a total number of 31 firms comprising of 65 respondents' questionnaires were completed, returned and found useful for analysis. This represented a response rate of 53% of the total surveyed firms which according to Ellhag and Boussabaine (1999) and Idrus & Newman (2002) is good enough in construction management studies. This response rate is higher than earlier studies on construction firms by Aibinu (2007), Bala *et al.* (2009) and Hany *et al.* (2013) which employed the use of surveyed sample frames of 200, 150 and 67 firms with response rates of 41 (21%), 30 (20%) and 27(40%) firms respectively. It is also of interest to note that in a study on failure and financial related factors in Malaysian contracting firms, only six firms and six representatives in Malaysia were sampled and three years financial statements were accessed (Halim *et al.*, 2010).

Table 1: Number of Sampled Locally-Owned Construction Firms

States	Institutions	Total Number of Surveyed Firms	Total Number of surveyed personnel of Firms	Total Number of Firms that Responded	Total Number of Questionnaire fit for Analysis
Lagos	UNILAG	18	54	3	6
	LUTH	5	15	2	2
Ondo	FUTA	12	36	10	19
Osun	OAU	14	42	10	25
	OAUTHC	10	30	6	13
Total		**59**	**177**	**31**	**65**

IV. Presentation and Discussion of Findings

a) Characteristics of actual sampled LOCOFs

Table 2 showed characteristics of the actual sampled locally owned construction firms respondents in this study. Construction professionals (36.9%) while others are contract manager (20%) and site managers (29.2%). About 50% of them had an experience of more than 10 years and more than 70% of the firms have been in operation for more than 10 years. In addition, more than 50% of the firms have executed over 11 construction projects and most firms operate in Nigeria alone (86.2%) and are mostly patronized by both private and public sector in Nigeria. Although a few of them did not give the detail of their turnover, however 52.30% of the respondent claimed their firms had a turnover of between N10 million to N 150 million in the year 2014 while 13.8% of them had a turnover of more than N150 million . These characteristics suggest that respondents have the exposure and long term experiences to be able to give substantial information that could help in making useful inferences and deductions on factors influencing the viability of locally owned construction firms.

Table 2: Characteristics of actual sampled LOCOFs

	Frequency	Percentage
Respondents' designation		
Contract manager	13	20
Construction professional	24	36.9
Site manager	19	29.2
Others	9	13.8
Years of experience		
0-5years	20	30.8
6-10years	15	23.1
11 – 20years	20	30.8
Over 20years	10	15.4
Age of construction company operation		
0-5years	2	3.1
6-10 years	7	10.8
11-20 years	22	33.8
>20 years	21	33.8
No response	12	18.5
Number of project in time past		
0-5	12	18.5
6-10	15	23.1
11 – 20	25	29.2
over 20	13	29.2
Number of permanent staff		
0-5	12	18.5
5 – 50	44	67.7
over 50	8	12.3
No response	1	1.5
Annual firm's turnover		
less than N10 million	11	16.9
N10 to N49 million	20	30.8
N50 to N150 million	14	21.5

Over N150 million	9	13.8
No response	11	16.9
Types of Construction work		
General building	35	53.8
Civil engineering	12	18.5
Building and Civil No response	17 1	26.2 1.5
Firm's scope of operation outside Nigeria		
Major	6	9.2
Minor	3	4.6
Non	56	86.2
Major Client		
Government	29	43.0
Both	36	57.0

b) Ranking of factors influencing the viability of LOCOFs

Table 2 shows the mean value, standard deviation, relative importance index (RII) and the ranking of the 37 factors earlier identified from literature as factors influencing the viability of construction contractors. The Standard deviation of each indicator is relatively small enough to conclude that the respondents agreed on the factors influencing the viability of LOCOFs. The rank of each variable was determined by calculating the arithmetic mean and the relative importance index of each variable and subsequently arranged in a rank order (Table 3).

An overview of the ranking of factors influencing the viability of LOCOFs shown in Table 3 indicates all the factors having a relative importance index (RII) and mean that is greater than 2.5 and 0.5 respectively. However, nine factors have a RII and mean greater than 4 and 0.8. These mean that despite the fact that all the identified factors were important to the viability of the construction business, nine factors tend to be extremely important. These factors cut across customer satisfaction, financial, internal business and environmental perspective of the construction business. Organizational competence which ranked first and quality of construction work and services which ranked third are customers' satisfaction based factors. Cash for construction work which ranked second and prompt payment of work certificate and cost of construction materials which ranked fifth and seventh respectively are financial based factors. Availability of skilled labour, and employee satisfaction are internal organisation and strength of the firms based factors. Lastly, prompt payment of work certificate and cash for construction work earlier referred to as financial based are also influenced by government policy and practice and may also be inferred to as construction business environmental based factors. All these factors expressed by their various ranking influences the survival of the construction business.

Table 3: Relative Importance Index of Factors Influencing the Viability of LOCOFs

No.	Factors Influencing the viability (survivability) of LOOFs	Mean	SD	RII	Rank
1.	Organizational competence	4.40	0.81	0.88	1
2.	Cash for construction work	4.36	0.74	0.87	2
3.	Quality of work and services	4.31	0.75	0.86	3
4.	Quality of construction work and services	4.30	0.75	0.86	3
5.	Availability of Skilled labour	4.16	0.84	0.83	5
6.	Prompt payment of work certificate	4.16	0.84	0.83	5
7.	Cost of construction material	4.08	0.74	0.82	7
8.	Employee satisfaction	4.06	0.77	0.82	7
9.	Reputation of good clients-contractors' relationship	4.00	0.84	0.81	9
10.	Availability of artisan and craftsmen	4.00	0.76	0.80	10
11.	Management of construction site Material	3.98	0.77	0.80	10
12.	Management of construction site labour, plant and equipment	3.94	0.89	0.79	12
13.	Government Policy	3.91	0.94	0.78	13
14.	Availability of safety equipment	3.91	0.97	0.78	13
15.	Construction technical expertise	3.86	0.83	0.77	15
16.	Procurement practices (The way contract is awarded)	3.84	0.95	0.77	15
17.	Cost of construction labour	3.81	0.66	0.76	17

18.	Construction work turnover/successful tender rate	3.81	0.66	0.75	18
19.	Specialization of contractors work	3.77	0.79	0.75	18
20.	Number of high performance professional	3.77	0.96	0.75	18
21.	Predictability of construction cost and time	3.73	0.95	0.75	18
22.	Project organization structure	3.73	0.93	0.74	22
23.	Construction profit margin	3.66	0.72	0.74	22
24.	Advanced construction technology	3.64	1.07	0.72	24
25.	Inflation	3.55	1.08	0.71	24
26.	Cost of plant and equipment purchase and maintenance	3.56	0.83	0.71	24
27.	Tax	3.48	1.10	0.70	27
28.	Bad weather and Natural disaster	3.45	1.14	0.69	28
29.	Accessibility to loan	3.44	1.11	0.69	28
31.	Interest on loan	3.20	1.22	0.64	30
32.	Credit purchase of material	3.17	1.03	0.64	30
30.	Corruption	3.20	1.52	0.63	32
33.	Incident rate	3.17	1.05	0.63	33
34.	Age of operation	3.17	0.92	0.63	33
35.	Firm impact on community	3.13	0.92	0.62	35
36.	Accident cost	3.03	1.02	0.60	36
37.	Firm size	2.92	1.00	0.58	37

At this juncture, it is very important to describe the thirty seven important factors in a more concise form for ease of inferences and appropriate deductions. To achieve this aim, principal component factor analysis was used to reduce these factors into major components factors.

c) *Principal factors influencing viability of LOCOFs*

This section sets out to reduce the 37 variables identified as important factors influencing the survival of the LOCOFs to a fewer number component factors. Principal component analysis was carried out using the computer-based Statistical Package for Social Sciences (SPSS version 15). Common factors which account for the correlation among the variables were extracted and this resulted in a reduction of thirty –seven (37) large body of variables to eleven (11) components factors. The grouping of variables is based on their factor loadings. A factor loading indicates the degree of association of a variable with the component and the percentage variance of the component that is explained by the variable. Variables which appear to have the highest loading in one component belong to that component, also the highest loading of a variable higher than 0.4 was assigned to the components that has the loadings (see Table 3).

Factor analysis is widely belief to be an inadequate statistical analysis on small sample sizes and for a study as this with a less than 100 sample size, there is the need to validate the use of this statistical method. As observed in section 4.3, small sample size is sometimes one of the features of a study as this. This is due to the organizational structure of most LOCOFs which makes it difficult for them to be easily accessed except during active site construction work.

Factor analysis has been used on small sample size which is sometimes referred to as sample to variable size (STV) ratio. MacCallum *et al.*, (1999) made use of a STV of 1.2:1, Henson and Robert (2006) and Bala *et al.* (2009) made use of a STV of 1.48:1 and 1:1 respectively. MacCallum et al., 1999 posited that as communalities become lower the importance of sample size increases when all communality are above 0.6, relatively small samples (less than 100) may be perfectly adequate. Preacher and MacCallum (2002) also stipulate that "As long as communalities are high, the number of expected factors is relatively small, and model error is low (a condition which often goes hand-in-hand with high communalities), researchers and reviewers should not be overly concerned about small sample sizes.

Result from Table 3 reads 11 components factors with 37 variables and it represented a sample to variable size of 1.75:1. (65/37) with all its Eigen values greater than one. The Kaizer-Meyer-Olkin (KMO) measure of sampling adequacy achieved a value of 0.551 which is very close to 0.6, this is appreciable owing to the fact that most communality of the variables after extraction in this study were above 0.7. The Bartlett test of sphericity was also significant ($\chi^2=1385.548$; $df=666$; $p<0.001$) suggesting that the population matrix was not an identity matrix. To this end, necessary tests in respect of the factorability and adequacy of the sample size were favourable for factor analysis to proceed.

Table 4: Principal Factor Analysis of Factors Influencing Viability of LOCOFs

	Component											Communality
	1	2	3	4	5	6	7	8	9	10	11	
Cash for construction work.	.111	-.063	.075	.004	-.123	-.083	-.175	.793	-.019	-.202	.155	.769
Construction profit margin.	-.076	-.073	.096	-.043	-.040	.064	-.021	.118	-.031	.019	.924	.898
Accessibility to loan.	.033	-.053	.098	.115	.247	.726	-.064	.119	-.007	.047	.075	.641
Interest on loan	-.081	.053	.382	-.056	.016	.582	.254	-.178	.032	-.238	-.021	.652
Credit purchase of material.	-.001	-.210	-.161	.219	.256	.491	.168	-.017	.203	-.220	.453	.749
Prompt payment of work certificate.	.104	.288	.184	-.085	.141	.341	.123	.464	-.322	.093	.332	.725
Cost of plant and equipment purchase maintenance and hiring.	.277	.174	.162	.285	.106	.035	.351	.401	.188	.091	.342	.671
Cost of construction labour.	.152	.175	.270	.019	.206	.162	.329	.508	.167	.122	-.112	.618
Cost of construction material.	.057	-.037	.261	.419	.340	.100	.175	.494	.146	.087	-.035	.679
Project organization structure.	.782	.067	.152	.094	.114	-.032	.009	.152	.188	.159	-.120	.761
Management of construction site. Material	.691	.230	.313	.029	.270	.275	.082	-.107	-.097	-.024	.054	.809
Predictability of construction cost and time.	.481	.216	.446	.368	.020	.138	-.020	-.100	-.221	.156	-.076	.722
Management of construction site labour, plant and equipment.	.749	.064	-.012	.101	.149	-.040	.131	.164	-.093	-.071	.018	.658
Organizational competence/client satisfaction.	.196	.181	.786	.243	.140	.093	-.053	.076	-.004	.087	.145	.814
Quality of service and works.	.134	-.027	.839	.071	.196	.138	.172	.221	.015	.011	.120	.878
Employee Satisfaction.	.110	-.127	.604	.264	.336	.074	.135	.176	.090	-.115	-.205	.694
Reputation of good client-contractor's relationship.	.289	-.132	.177	.149	.514	-.046	.522	.124	-.085	-.286	.028	.798
Age of operation.	.333	.167	-.022	.393	.385	-.033	.229	-.037	-.305	.387	.072	.744
Firm Size.	.597	.200	.030	.310	-.070	-.205	.011	.286	.049	.394	-.039	.781
Firm's Impact on the community.	.178	.338	.239	.175	.109	-.039	.161	-.075	-.100	.613	-.071	.669
Inflation	-.193	.147	-.041	-.010	-.020	.289	.223	-.110	.671	-.083	-.049	.666
Tax	.147	.076	.029	.033	.010	.048	.138	.139	.776	-.008	.021	.673

Table 5.22: Principal Factor Analysis of Factors Influencing Viability of LOCOFs (Continued)

	Component											Communality
	1	2	3	4	5	6	7	8	9	10	11	
Corruption	-.028	-.034	.084	.248	-.066	.706	.115	.007	.367	.035	.032	.724
Construction work turnover/successful tender rate.	-.009	.226	.239	.254	.461	-.041	-.031	-.034	.435	.447	.147	.800
Availability of Skilled labour.	.196	.183	.365	.072	.520	.248	-.144	.088	.106	.144	.116	.616
Availability of Artisan and craftsmen.	.219	.135	.270	.068	.775	.152	-.081	-.044	-.090	-.049	-.036	.788
Procurement practices (The way contract is awarded).	.043	.238	.007	.080	-.077	.024	.787	.096	.110	.045	-.025	.714
Government policy.	.103	.142	.118	.024	-.081	.182	.725	-.184	.326	.168	.067	.783
Bad weather and Natural disaster.	.156	-.024	.221	.648	.301	.037	.066	.120	-.062	.109	-.170	.649
Construction technical expertise	.427	.341	.104	.016	.435	.327	-.085	.106	.107	.018	-.082	.643
Quality of construction work and services	.039	.464	.371	.112	.218	.001	-.047	.095	.017	-.648	-.054	.849
Specialization of construction work	.099	.794	.160	.073	.089	-.029	.093	-.187	.075	.106	-.016	.741
Advanced construction technology	.193	.884	-.017	.130	.032	.030	.128	.030	.128	-.032	-.040	.874
Number of high performance professionals	.115	.779	-.063	.182	.080	-.091	.172	.234	.024	.061	-.016	.761
Incident rate	.026	.323	.115	.735	-.016	.240	-.003	.095	.001	.093	-.006	.734
Accident cost	.278	.168	.132	.784	-.003	.098	.084	-.086	.162	-.072	.146	.814
Availability of safety equipment	.528	.152	.306	.331	.090	-.295	.216	-.229	.045	-.123	.131	.733
Eigen Value	3.45	3.28	3.13	2.82	2.49	2.43	2.21	2.11	2.04	1.77	1.57	
% of total variance	9.27	8.86	8.46	7.63	6.74	6.56	5.97	5.70	5.50	4.77	4.24	

Total % of variance explained = 73.75

Kaiser-Meyer-Olkin Measure of sampling adequacy = 0.551(aprox. 0.6)

Bartlett's Test of Sphericity: $\chi 2=1385.548$; df=666; $p<0.001$

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization. a Rotation converged in 18 iterations.

The first component factor is effective management of individual project related issues and it accounted for 9.34% of the observed variance. Six items loaded under this component ranged between 0.481 and 0.782. Items loaded and their loading scores include: project management structure (0.782); management of construction site labour, plant and equipment (0.749); management of construction site material (0.691); firm size (0.597); availability of safety equipment (0.528), and predictability of construction cost and time (0.481). Most of the items loaded in this component factor focused on the uniqueness of each construction projects that should be well planned for the overall construction firms' survival. Construction labour,

material, plant and equipment should be properly harnessed on each project and in such a way as to gain construction cost and time. Che Wan Putra *et al.* (1999) and Edward (2001) noted in summary that the result of improper handling and managing material, plant and equipment on site during a construction process will influence the total cost, time and the quality of the construction work. To this end, it is expected that a well organised and positioned construction project management structure on each site will go a long way in representing and protecting firms' interest well in effective management of all its resources for improved production.

The second component factor was improved construction method related issues and it represents 8.86% of the observed total variance. The following were the three items loaded and its loading scores: advanced construction technology (0.884); specialization of construction work (0.794) and number of high performance professionals (0.779). The three items in this component are essential to improving construction works delivery. High quality construction products and material can be done at lowest possible price due to good technical expertise resulting in an enhanced construction business.

The third and tenth component factors were clients' satisfaction related issues and they represent 8.46% and 4.77% of the observed total variance respectively. Three items were loaded under the third component while two items were loaded under the tenth. Items under the third components include: quality of service works (0.839); organisational competence/ client satisfaction (0.786) and employee satisfaction (0.604). The tenth component also include: quality of construction work and services (-0.648) and firms' impact on the community (0.613). This indicator shows the effect of employees' satisfaction and improved construction work delivery on the viability of construction firms obtained in this analysis. Satisfaction of customers and other interested parties is necessary for the success of firms. In other word, increasing the satisfaction of customers and stakeholders through effective goal development, cost reduction, productivity and process improvement has proved to be essential for organisations to stay in operation (Oakland and Marosszeky, 2006).

The fourth component factor was on construction safety and uncertainty related issues which represented 7.62% of the observed variance. Three items loaded under this component include: accident cost (0.784); incident rate (0.735) and bad weather and natural disaster (0.648).This result indicates the importance of construction safety and uncertainty related issues to the viability of LOCOFs. Construction safety is treated with caution and becomes very important when cost arises from penalty due to non compliance with regulations and the cost due to accident and injuries. Accident and weather conditions are both construction risk, while the former can be reduced and possibly averted through good safety behaviour and safety kits, the later cannot. Although most developed countries construction firm insurance policy are well developed to mitigate this risk, most developing countries especially in African are yet to achieve this fit (Windapo and Martins, 2010). Uncertainty arising from adverse weather condition are known to result in construction cost overrun (Ameh et al., 2010) and adversely influence the performance of construction firms (Nudurupati et al., 2007).

The fifth component factor was construction labour and turnover which represented 6.74% of the observed variance. Three items loaded under this component include: availability of artisan and craftsmen (0.775); availability of skilled labour (0.520) and construction work turnover/successful tender rate (0.461). This result underscores the importance of the availability of all relevant construction labour of all trades in executing construction works. Also, A high turnover consequent to the number of contracts won will enhance the availability of fund for firms' construction operation and this can significantly contribute to its profitability and hence its viability (Kaka and Cheetham, 1997; Odeyinka *et al.*, 2003; cui *et al.*, 2010).

The sixth component factor was lack of construction loan and corruption and this represents 6.56% of the observed variance. Four items were loaded under this component and it ranged from 0.491 to 0.726. Items loaded under this component include: accessibility to loan (0.726); corruption (0.706); interest on loan (0.582) and credit purchase of material (0.491). This result indicates that LOCOFs viability will be improved if it has access to very low interest credit and corruption in the industry is drastically reduced if not eliminated. Presently, the percentage of loans disbursed to the construction sector is one of the lowest compared to other sectors such as manufacturing. Industry participants believe that construction remains a misunderstood industry and hence, is still being deemed risky by financial institutions. The ability to obtain funding, however, is a critical factor to the success of the contractors (CIDB, 2008). As at today, interest rate in the banking sector remains as high as 20%, lenders securing such loan do so, possibly to keep busy. As a result of the high interest rate, it may be impossible for lenders to make profit with such loan. It was also observed by Ameh *et al.*, (2010) that high interest charged by banks on loans is a top ranked factor responsible for construction cost overruns. In the same vein, these authors also ranked fraudulent practices and kickbacks as also a top ranked factor responsible for cost overruns in the construction sector.

The seventh and ninth component factors were referred to as construction business environment related issues and each component accounted for 5.97% and

5.50% of the observed variance respectively. Three items loaded under the seventh component include: procurement practices (0.787); government policy (0.725) and reputation of good client-contractor relationship (0.522). The ninth component has two items loaded and it include: tax (0.776) and inflation (0.671). These result revealed the importance of the impact of government activities, policies and the countries' macroeconomic on the survival of the local construction business.

The eighth and eleventh component factors were referred to as firms' profitability related issues and each component accounted for 5.7% and 4.24% of the observed variance respectively. Five items loaded under the eighth component include: cash for construction work (0.793); cost of construction labour (0.508); cost of construction material (0.494); prompt payment of work certificate (0.424) and cost of plant and equipment purchase, maintenance and hiring (0.401). The only recognized item loaded under the eleventh component is construction profit margin (0.924). This result gives credence to the importance of firms' profitability related issues on the viability of LOCOFs'. Profitability is also considered as one of the most important indicators in many other studies, such as Wang *et al*. (2010) and Yu *et al.* (2007). One of the most common corporate economic objectives is profitability and construction executives ranked it as the first indicator to measure financial performance of companies (Halim, 2010) . Financial problems faced by contractors are also due to low profit margins from projects. Firms most often find themselves in a tight situation of delivering good construction product at the cheapest price under the stiff competitive tendering system. Although this system is the best way to ensure the completion of any project at the lowest price, it is the most difficult obstacle contractors are forced to overcome in an attempt to survive the construction business competitive world. It is pertinent to note that low profit margin was identified as one of the unique features of the construction business that predisposes it to a huge risk and a strong contributory factor to its failure (Ibrahim, 2012; Kivrak and Arslan, 2008).

In conclusion, the minor differences observed in the percentages of variance in the eleven components revealed a closely related level of importance between the components factors which suggest that LOCOFs viability is a function of many closely related factors and not just a small group or a single factor. However, the highest factor loading assigned to construction profit margin showed a very significant importance of its impact on the viability of the locally-owned indigenous construction firms.

V. Conclusion and Recommendation

To identify and examine factors influencing the viability of LOCOFs, sixty-five properly filled questionnaires were analysed. The characteristics of respondents show 36.9% as construction professional, 20% and 29.2% as contract managers and site managers respectively among other characteristics. Ranking of factors influencing the viability of LOCOFs indicated that all the factors had a relative importance index (RII) and mean that is greater than 2.5 and 0.5 respectively. However, nine factors had a RII and mean greater than 4 and 0.8. These mean that despite the fact that all the identified factors are important to the viability of the construction business, nine factors are extremely important. An attempt to describe the thirty seven important factors in a more concise form for ease of inferences and appropriate deductions led to the analysis of data using the principal component factor analysis. Eleven component factors obtained were referred to as: effective management of individual project; improved construction method; clients' satisfaction and construction safety related issues. Others include: construction labour and turnover; lack of construction loan and corruption; construction business environment and firms' profitability related issues. A closely related level of importance was observed between components factors that determine the viability of LOCOFs which suggest that their viability is a function of many closely related factors and not just a small group or a single factor. However, the highest factor loading assigned to construction profit margin showed a very significant importance of its impact on the viability of the locally-owned indigenous construction firms

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