

## DETERMINANTS OF NON-INDIGENOUS SMALL AND MEDIUM CONSTRUCTION ENTERPRISES (SMCEs) RESOURCES FOR COMPETITIVE ADVANTAGE IN NORTH-CENTRAL NIGERIA

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### Abstract

It has been shown that the few non-indigenous construction firms dominate the construction market in Nigeria. But there is no empirical evidence to identify their competitive strength. This paper aims at reducing this research gap. To also take advantage of globalization, treaties that Nigeria acceded to and the Nigerian Content Law, there is the need for Nigerian indigenous construction firms to adopt appropriate strategy to create and sustain competitive edge against rival. Therefore the study provides an insight to how non-indigenous Small and Medium Construction Enterprises (SMCEs) deployed resources to gain competitive advantage (CA) in North Central Nigeria. It explored the deployment of human, financial and physical resources to gain competitive success. Data from 87 construction SMEs were analysed using t-test and linear regression. Finding showed that 31.9% of the variation in CA is explained by the resources deployed. The p-value (0.026) of the difference between the estimated values of equipment of indigenous and foreign firms make significant contribution to resources for CA. But since physical resources are tangible, indigenous entrepreneur are encouraged to view the CA of the foreign SMEs as surmountable.

**Keywords:** *Competitive advantage, Resources, Human resources, financial resources and Physical resources.*

### Background to the Study

The paper explores the determinants of non-indigenous Small and Medium Construction Enterprises (SMCEs) resources for competitive advantage in North-Central Nigeria. It gives insight into the use of resources for competitive success in the region. The Agency survey (Small and Medium Enterprises Development Agency of Nigeria (SMEDAN), (2010) showed existing state of SMCEs in the North Central Nigeria. To take advantage of the Nigerian Content Law, globalization and the various trade liberalization treaties to which Nigeria is a signatory suggests a need for indigenous SMCEs to adopt appropriate strategy to create and sustain a competitive edge.

Ogbu (2011), Egmond and Erkelens (2007), Dlungwane and Rwelanlla (2004), Muhegi and Molango (2004) showed that majority of contractors in many construction industries fall in the SMCEs range. According to Yan, Chew and Cheah (2006) construction SMEs in China are confronted with the tasks of keeping themselves competitive after China accession to World Trade Organisation WTO. Furthermore, Chinese companies' entry into Africa's construction sector has intensified market competition. It is evident that Chinese companies have a degree of competitive advantage (CA) in Africa (Corkin, Burke and Davis 2008). This must have emanated from their resources including special capabilities and unique assets (rare, inimitable and non-substitutable), according to Barney (1991).

Rothaermel (2008) established that competitive advantage (CA) is when a firm creates an edge over rivals in securing customers and also defends against competitive forces. Such is more profitable than its competitors and also grows faster. In South East Asia (SEA), Ling (2004) suggested that CA to architectural, engineering and construction firms means continuous growth, increase in sales and profitability. This can be achieved by deploying resources to most productive uses possible.

Nigerian economy (growing at 7.1 per cent) is rising without Nigerians, (McKinsey Global Institute Report, 2014). Idoro (2010) showed that the 7% foreign construction firms account for 90% of the total value of construction in Nigeria. The competitive advantage of foreign construction firms in Nigeria dates back to the pre-independent development inducements and legislations on infrastructure. Adopting the competitive options of the foreign construction firms in Nigeria is worthwhile, (Ogbu, 2011). Therefore, this paper explore the determinants of non-indigenous small and medium construction enterprises resources for competitive advantage in North Central Nigeria adopting human, financial and physical resources as variables.

### Objectives of the Study

The paper seeks:

1. To determine whether human resources influence the competitive advantage of non-indigenous small and medium construction enterprises.
2. To establish if financial resources has relationship with the competitive advantage of non-indigenous small and medium construction enterprises.
3. To identify whether physical resources influence the competitive advantage of non-indigenous small and medium construction enterprises.

## Literature Review

### Theoretical Framework

#### Resource-Based View of Competitive Advantage

The Resource-Based View (RBV) perspective states that rare and valuable resources are central to a company when it comes to their competitive advantage (Grant, 2001). The RBV sees a firm as a collection of resources; human resources (personnel), financial resources (capital), physical resources (plant and equipment), social resources (network of contacts) and organizational resources (structure and processes). These resources can be tangible or intangible (tacit). Resources and capabilities of a firm are the primary constants upon which a firm can establish its identity and frame its strategy. Strategic resources that have value- economically important- will position a company in a competitive market. Only resources considered to be strategic are sources of competitive advantage and improve performance.

Based on two critical assumptions, Barney (1991) articulated the firm's resources as the fundamental determinants of CA. The first assumption is that resources are assumed to be heterogeneously distributed among firms. Thus it allows for the existence of differences in firm resources endowment. Secondly, resources are assumed to be imperfectly mobile. This second assumption allows difference to persist over time. If the resources are rare (unique, few companies hold these resources) they generate a CA for a firm that sustains them. If they are unique (difficult to copy and hard to duplicate) they grant the owner of the firm a long-lasting CA. Al-Rfou and Trawneh, (2009) argue that the sources of CA have shifted from financial resources to technology and now to human resources.

#### Resources

Construction is a combination of three categories of resources. The first is design services, know-how of engineers, construction process and technology; the second is labour craft and machine; the third is materials, (Rotheamel, 2008). Popovic (2010) and Hitt, Ireland and Hoskssoni (2006) observed that employees are the most important sources of value for SMEs. Al-Rfon and Traweh (2010) explored the extent to which competitive advantage can be achieved through job development. Vele (2012) emphasized intangible resources for an effective competitive strategy, (brand name, image, reputation and organizational – process - resources). Any increase in performance that will eventually boost market position is determined by the way resources are used. For construction firms, Dangerfiel, Quigley and Kearnney's (2013) model isolated financial capital, human resources, supplies/suppliers, and reputation. For the Chinese firms in Africa, Corkin, Burke and Davis (2008) observed access to capital, supply chain, cost and labour productively. Muhegi and Malongo (2004) identified finance, knowledge and skill, plant and equipment. Al-Rfou and Traweh (2010) argued that the sources of CA have shifted from financial resources to technological resources and now to human capital. Dangerfield et al showed that to a typical contracting firm, human resources, money and materials affect their competitive position and thus its ability to win further contract in the market. The DWB (2007) concluded that in developing countries the construction industry operates with limited and unreliable resources.

## Methodology

A questionnaire was developed for the purpose of the survey. A total of one hundred and twenty (12) questionnaires were distributed to both indigenous and non-indigenous Small and Medium Construction Enterprises in Abuja and Kaduna. Eighty Seven (87) duly completed questionnaires, representing 72.5% of the total number of questionnaire distributed were collected and used for data analysis. The reliability test of Cronbach's alpha coefficients was used to examine the reliability among multiple measures and the internal consistency of the variables of the study. The study used Principal Component Analysis (PCA) and Factor Analysis to validate data collected. Multicollinearity test was conducted among the five study variables using tolerance and variance inflation factor (VIF) statistics of predictor variables.

Alsoboa and Alalaya (2015) deployed t-test to empirically determine the extent to which competitors accounting influence competitive advantage (CA) of manufacturing companies. Then the regression analysis showed the contribution of the technique and also explained the variation in CA. Kavitha, Karthikeyan and Devi (2013) measured CA and competitive priorities of small scale industries using regression analysis. Linear regression allows for estimating the relationship between a dependent and a set of independent variables.

## Analysis and Results

### General Characteristics of Respondents

The descriptive statistic indicated that Twelve (12) (13.5%) of the respondent are sole proprietors; two (2) (1.8%) of the respondents were partners; and the majority seventy four (74) (84.7%) were limited liabilities companies. Also seventy three (73) (83.8%) of the respondents operated on a national scale; three (3) (3.6%) of the respondents on a regional scale; and eleven (11) (12.6%) of the respondents operated internationally.

To find out whether human and financial resources influence resources of non-indigenous construction SMEs to gain competitive advantage strategy, the respondents were asked; whether the competitive strength of their enterprises depended on the capability (unique, rare and hard to copy skills) of human resources. For financial, they were asked if their firms had access to required working capital for projects, and for physical resources respondents were asked whether they attribute the competitive edge of their firms to the available machinery and equipment. The survey also sought to know whether their firms have competitive strength leverages (website, E-mail address, Internet and Internet services) on their enterprise information system.

Insight was sought into human resources capability through budget for training (Table 1), sources of project financing were also requested for financial resources (Table 2) and the values of machinery and equipment was sought for the strength of physical resources (Table 3).

Table 1: Budget for Training and Skill Acquisition (in million) in the Last Five Years

|         | Indigenous | Foreign |
|---------|------------|---------|
| 2009    | 1.86       | 2.16    |
| 2010    | 1.86       | 2.16    |
| 2011    | 1.86       | 1.97    |
| 2012    | 2.14       | 2.12    |
| 2013    | 1.29       | 1.39    |
| Average | 1.80       | 1.96    |

Table 2: Sources of Working Project Financing

| Source                    | Indigenous (percentage) | Foreign (percentage) |
|---------------------------|-------------------------|----------------------|
| Project mobilization fees | 90                      | 67                   |
| Financial institutions    | 80                      | 40                   |
| Government assistance     | 20                      | 37                   |
| Trade credit              | 0                       | 35                   |
| Firm parent organization  | 20                      | 33                   |
| Previous profit retention | 60                      | 36                   |

Table 3: Estimated Values of Machinery and Equipment (in million) for the Last Five Years

| Year    | Indigenous | Foreign |
|---------|------------|---------|
| 2009    | 1.00       | 1.45    |
| 2010    | 1.57       | 2.01    |
| 2011    | 1.29       | 1.73    |
| 2012    | 1.00       | 1.45    |
| 2013    | 1.29       | 1.56    |
| Average | 1.23       | 1.64    |

### Inferential Statistics

#### Relationship Test between Human Resources and Competitive Advantage

Much as Table 1 shows that the foreign enterprises have more budgets for training and skill acquisition in the last five years than the indigenous enterprises, the p-value (0.457) of the independent sample t-test in Table 4 is greater than 0.05. It indicated that the average budget for training and skill acquisition of the indigenous (N1.8 Million) is not significantly less than the average budget for training and skill acquisition of the foreign enterprises (N1.96 Million).

Table 4: Independent Samples Test

| T     | Df | Sig. (2-tailed) | Mean Difference | Std. Error Difference |
|-------|----|-----------------|-----------------|-----------------------|
| -.782 | 8  | .457            | -.15800         | .20212                |

Therefore it is concluded that the average budget for training and skill acquisition of the indigenous enterprises is not significantly different from the average budget for training and skill acquisition of the foreign enterprises.

#### Relationship Testing for Financial Resources and Competitive Advantage

The significance of the difference between the source of project financing of the foreign and the indigenous enterprises is tested using independent sample t-test at 5% level of significance (Dehning and Stratopoulos, 2003). The p-value (0.822) of the independent sample t-test in Table 5 is greater than 0.05.

Table 5: Independent Samples Test

| T    | Df | Sig. (2-tailed) | Mean Difference | Std. Error Difference |
|------|----|-----------------|-----------------|-----------------------|
| -231 | 10 | .822            | -3.66667        | 15.88221              |

Therefore it is concluded that the difference between the source of working project financing of the foreign and the indigenous enterprises is insignificant. Thus it does not make significant contribution to resources for competitive advantage.

#### Relationship Testing for Physical Resources and Competitive Advantage

The significance test between the differences in average values of machinery and equipment of indigenous and foreign enterprises is tested using independent sample t-test at 5% level of significance. The p-value (0.026) of the independent sample t-test in Table 6 is less than 0.05.

Table 6 Independent Samples Test

| T     | df | Sig. (2-tailed) | Mean Difference | Std. Error Difference |
|-------|----|-----------------|-----------------|-----------------------|
| 2.727 | 8  | .026            | .41000          | .15037                |

Therefore it is concluded that the difference between the estimated value of machinery and equipment of the foreign and the indigenous enterprises is significant. Thus it makes significant contribution to resources for competitive advantage.

### Regression Analysis on Resources and Competitive Advantage

To confirm the results of the t-test using regression analysis (Kavitha, Karthikeyan & Devi 2013; Pamulu, 2010). Linear regression model was employed to model the relationship between the dependent variable (competitive advantage) and independent variable (firm resources).

Table 7: Model Summary

| Model | R    | R Square | Adjusted R Square |
|-------|------|----------|-------------------|
| 1     | .565 | .319     | .313              |

Predictors: (Constant), Resources

Dependent Variable: Competitive advantage

The coefficient of determination ( $R^2$ ) and correlation coefficient (R) showed the degree of association between resources and competitive advantage strategy. The result of the linear regression indicated that  $R^2=0.319$  and  $R=0.565$  (indicating that 31.9% of the variation in competitive advantages is explained by resources) – Table 7. This is an indication that there is a strong linear relationship between resources strategy and competitive advantage. This implies that an increase in resources such as human, finance and physical strategy leads to an increase in CA of non-indigenous construction SMEs.

This concurred with the Resource Base View (RBV) Barney (1991). These theories see a firm as a collection of resources from human resources, physical resources, social resources and organizational resources. Only resources considered to be strategic are sources of competitive advantage and improve performance. It also agrees with Vele (2012) that gaining CA is influenced by the firm's resource. It can be inferred that the competitive advantage strategy of non-indigenous construction SMEs is associated strongest by the level of physical resources. This study showed that physical resources strategy is keys to the competitive advantage of construction SMEs.

Next an Analysis of Variation (ANOVA) was done on the independent variables and Table 4.8 shows the results of ANOVA test which reveals the resources strategy have significant effect on competitive advantage of non-indigenous construction SMEs.

Table 8: Analysis of Variance

| Model |            | Sum of Squares | Df | Mean Square | F      | Sig. |
|-------|------------|----------------|----|-------------|--------|------|
| 1     | Regression | 2.278          | 1  | 2.278       | 51.086 | .000 |
|       | Residual   | .225           | 5  | .045        |        |      |
|       | Total      | 2.503          | 6  |             |        |      |

Dependent Variable: Competitive advantage

Predictors: (Constant), Resources

Since the P value is actually 0.000 which is less than 5% level of significance, Table 8 shows that the p-value due to this Regression Model (0.000) is less than 0.05. It is therefore concluded that the model is significant and therefore fit for use. The Linear Regression analysis shows that the linear relationship between resources and the competitive advantage of non indigenous small and medium construction industries in North Central Nigeria is  $y = 0.395 + 0.583x$ , the P-value of the slope of the model (0.000) is less than 0.05. These findings showed that resources strategy is significant determinant of the competitive advantage of non indigenous small and medium construction enterprises.

Furthermore, the exact model fit was done and result showed in Table 9 indicates that there is a positive gradient which reveals that an increase in resources strategy lead to increased competitive advantage.

Table 20 Coefficients

| Model |            | Unstandardized Coefficients |            | Standardized Coefficients | T     | Sig. |
|-------|------------|-----------------------------|------------|---------------------------|-------|------|
|       |            | B                           | Std. Error | Beta                      |       |      |
| 1     | (Constant) | .395                        | .069       |                           | 5.749 | .000 |
|       | Resources  | .583                        | .082       | .565                      | 7.147 | .000 |

Dependent Variable: Competitive advantage

$$y = 0.395 + 0.583 * x_1$$

Inference can be drawn from the finding and literature (Egbu 1999; Ceramic & Popovic 2010; Gal 2010; Vele 2012) that indigenous construction companies should focus more on physical resources to be competitive.

The results show that the Linear Relationship between the resources and competitive advantages of non-indigenous small and medium construction industries in North-Central Nigeria is  $y = 0.395 + 0.583 * x_1$ . Where y is competitive advantages of non-indigenous small and medium construction industry in North-Central Nigeria and  $x_1$  is resources. The p-value of the slope of the model (0.000) is less than 0.05. It is concluded therefore that resources is a significant determinant in the competitive advantages of non-indigenous small and medium construction enterprises in North-Central Nigeria.

### Conclusion

It is concluded that resources are significant determinant in the competitive advantage of non-indigenous construction SMEs in North Central Nigeria. The significant influence is from physical resource. Since this (equipment) is tangible and easy to imitate, it is not a sources of sustainable competitive advantage. Therefore with the right approach the advantage is surmountable.

## Recommendation

To further explore the predictors of the huge advantage that foreign construction SMEs enjoy in the study area, it is recommended that further search be focused on experiential resources (brand name, product reputation, timeless and duration urgency).

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