Influence of Supplier Appraisal on Procurement Performance in the Real Estate Industry in Kenya: A case study of International House Ltd.

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Procurement has increased in importance exponentially, as it has become a corporate weapon to realize organizational competitiveness. Thus, the function performance is of paramount importance to organizations in achieving their competitive advantage. To achieve this, supplier management becomes a critical issue. However, many organizations fail to carry out the supplier appraisal programs and when it is done it is not well structured and does not achieve the desired results. This study sought to establish the influence that the supplier appraisal has on the procurement performance in the real estate industry. It deeply studied how supplier appraisal criteria, models, practices and supplier development influence procurement performance. To achieve this objective, the study employed a descriptive research design. The data was collected using a questionnaire from the employees of International House Ltd. The study used stratified sampling method in coming up with a sample size of 36. The collected data was edited, coded and entered for analysis using statistical package for analysis (SPSS) version 17. Descriptive statistics such as frequencies and percentages and augmented with measures of central tendency (mean) and dispersion (standard deviation) were used. Additionally, multiple linear regression analysis was conducted to determine the relationship between dependent and independent variables. The findings were presented in pie charts, bar graphs, and tables for clarity. The study established that the research model predicts 57.1% of the procurement performance in the real estate industry.

Keywords: Supplier evaluation criteria, supplier evaluation practices, supplier evaluation models, assessment and supplier development, procurement performance

INTRODUCTION

Logeek (2010) noted that the procurement business function is increasingly recognized as a strategic area of organisation performance management. He further noted that for the procurement function to perform optimally, the organisation have to get the right supply chain who are innovative and always...
seek opportunities for continuous improvements. According to BCG (2011) one of the strategies of getting the right supply chain is through appraising the suppliers.

Procurement has increased in importance exponentially, as it has become a corporate weapon to realize organizational competitiveness (Choi & Krause, 2006). Organizational and environmental factors have significantly contributed on this change in procurement activities (Czinkota and Ronkainen, 2005). First, the ever changing business environment necessitates that corporations maximize the use of organizational competitiveness by cutting costs, establishing a quality product, and maintaining a technological edge (Herbig and O’Hara, 1996; Cagliano et al., 2006). Secondly, Martinez (2009) noted that organizations need to create value to the end customer by exceeding their expectations in terms of quality, time, cost and functionality in both products and services (Gonzalez, Quesada, and Mora, 2004). Hence, in today’s international business dynamic, the procurement function cannot be viewed in isolation in a firm; it is important that the procurement function operates in conjunction with the organisation, and that the procurement strategies are in tandem with corporate competitive strategy (Batenburg, 2007).

Chung et al (2004) noted that the global competitive environment drives organizations to be highly dependent on the success of supplier selection process. Chung et al (2004) noted that any deficiency in coordination of the process will lead to excessive delays and poor customer service. Samli & Browning, 2003) observes that suppliers are manufacturer's external organizations or business partners, and their performance will decide the future performance of the whole supply chain.

STATEMENT OF THE PROBLEM

ARCADIS (2014) noted that real estate industry disputes globally cost an average of $32.1 million in 2013. ARCADIS noted that this was caused by the failure to properly administer the contracts between the suppliers and the buyers, the failure to understand and/or comply with contractual obligations and increased suppliers’ inefficiency. ARCADIS argued that getting the suppliers right can fundamentally contribute to reduction in contractual disputes between the buyer and the supplier.

Several studies (Kariuki & Nzioki, 2010; Luchali & Ombati, 2013) have shown that supplier appraisal and management has been of less importance considering its strategic value to the organisation. Kariuki et al (2010) noted that the supplier evaluation and management in real estate industry in Kenya have not been given the priority despite the industry contributing to more than 5.1% GDP in the economy. The industry added KES 12.6 billion to the country’s GDP in Q1 2011 and employs more than 1 million people either directly and indirectly (KNBS, 2012). According to KNBS (2011) the real estate industry had a 5.1% GDP in 2009. Supplier inefficiencies have led the National Housing Corporation lose millions of money through rogue and unreliable suppliers (Luchali et al, 2013; Michira, 2013).

Despite the extent of documented studies on supplier appraisal there is limited evidence on studies on supplier appraisal and how it influence procurement performance in the real estate industry. Many of the existing studies have focused more on the methodologies of supplier evaluation (Hung et al. 2009; Wang et al. 2011; Elanchezhian et al. 2010; Aspemar et al. 2009; Ozdemir & Temur, 2009). In view of these a dedicated study is required to establish the influence of supplier appraisal on procurement performance in the real estate industry in Kenya.

THE OBJECTIVES OF THE STUDY

Overall objective: The study sought to investigate the influence of supplier appraisal on procurement performance in real estate industry in Kenya.

Research Questions
1. How do supplier appraisal criteria influence procurement performance in real estate industry in Kenya?
2. What is the influence of supplier appraisal practices on procurement performance in real estate industry in Kenya?
3. How does supplier appraisal model influence procurement performance in real estate industry in Kenya?

4. How does assessment and supplier development influence procurement performance in real estate industry in Kenya?

LITERATURE REVIEW

A. Supplier appraisal criteria

Birrell (2005) noted that the criteria used in the supplier appraisal process to select a suitable supplier empowers the procuring entity to determine whether the supplier is capable or competent enough to perform the work within budget, on schedule and at the required safety and quality standards. Birrell noted that selecting the proper evaluation criteria is essential especially to a private procuring entity whose objectives almost always comprise of maximizing profit, market share and future growth. Benyoucef, Ding & Xie (2003) observed that Supplier evaluation decisions are complicated by the fact that various criteria must be considered in decisions making process.

Cebeci, Kahraman & Ulukan (2003) noted that an organisation should require its suppliers to have a sound financial position. Financial strength can be a good indicator of the supplier’s long-term stability. A solid financial position also helps ensure that performance standards can be maintained and that products and services will continue to be available at the most competitive prices (Cebeci et al. 2003). Cebeci et al (2003) noted that for an organization to provide a consistently high quality product or service, achieve cost savings, buys at the right price, promote successful development efforts, and ensure future improvements, a firm needs competent technical support from its suppliers.

B. Supplier appraisal practices

Gordon (2006) observed that developing a robust, easy-to-deploy method of evaluating suppliers is a critical business competency. Gordon noted that the methodology should be sound and the approach practical. According to Arsan (2011), supplier evaluation may take various approaches which all influence the quality of data obtained from the suppliers which reflect the true picture of the suppliers. Bello (2003) noted that there are many sources which the buyer should use to check or verify the dependability and reliability of each supplier.

Arsan (2011) observed that desk appraisal is one of the widely used to collect information about the supplier. Arsan further noted that desk appraisal uses published or unpublished information already in existence and is particularly applicable to product and financial appraisals. Arsan added that desk research should always precede field research since it will indicate what matters need to be investigated. Beil (2009) noted that field research is important in supplementing desk research especially when appraising suppliers of high risk/high value products and when long-term, collaborative relationships are under consideration.

According to Arsan (2011) third party appraisals may also be undertaken mostly through a variety of agencies especially when assessing the compliance to quality systems such as BS/EN ISO 9000. Arsan (2011) emphasized the need for conducting site visits in supplier premises. Arsan noted that such visits are essential when appraising potential new suppliers of high value/high risk items or tenders for major projects. This is collaborated by Bello (2003) who observed that site visits enable information provided on a questionnaire to be verified and answers given by the supplier’s staff in the course of the visit to be evaluated.

Arsan (2011) noted that the frequency of supplier assessment determines the performance of the supplier. Arsan observed that frequent meetings with suppliers facilitate the prevention of inefficient practices at an early stage and encourage continuous improvement of suppliers. These assessments, however, are mutually beneficial only if both parties are willing to cooperate and provide the necessary inputs (Bello, 2003).

C. Supplier appraisal models

Supplier evaluation models are the methods used to conduct the selection process (Li et al., 1997). The methods chosen are extremely important to
the overall selection and appraisal process and can have a significant influence on the selection results (Bello, 2003). Arsan (2011) noted that several techniques are used by companies to evaluate suppliers and measure performance. Arsan further observed that the first step in implementing any of the techniques is to determine the attributes that should be considered. A firm should focus on the attributes that it finds most important.

Tahriri et al (2008) notes that the categorical method rates suppliers on several criteria which are then combined into a single score. Tahriri et al further notes that the categorical model is a simple method, but it is also the quickest, easiest, and least costly to implement. However, it may be influenced by recent events and usually implies a high level of subjectivity and therefore it is imprecise (Petroni, 2000). Arsan (2011) noted that using categorical method in supplier evaluation is the easiest method to implement but suffers from subjectivity. Arsan argues that the method does not provide a detailed insight into the supplier’s true performance because the attributes being measured are weighted equally. However, Bello (2003) notes that the method is simple and effective especially where the number of suppliers is limited and the number and volume of transactions are small.

Bello (2003) observed that weighted point method considers the attribute that are weighted by the purchasing organisation where the weight for each attribute is then multiplied by the performance score that is assigned. Finally these products are totaled to determine final rating for each supplier. According to CIPS (2006) this method is much in use because of the degree of objectivity it tends to bring to the process of evaluation. CIPS further argues that this approach is particularly suited to a quick decision on sourcing for emergency and/or small value imports. Tahriri et al (2008) postulated that weighted point model is also easy to implement, flexible, and fairly efficient in the optimization of supplier selection and evaluation decisions. Tahriri et al however noted that it is more costly than the categorical method, but tends to be more objective, even though it relies on the buyer’s assessment of the supplier performance.

According to Bello (2003), cost ratio method relates all identifiable purchasing costs to the monetary value of the goods received from vendors. The higher the ratio of costs to value, the lower the rating applied to the vendor. Bello further notes that the method is based on cost analysis that considers cost ratios for product quality, delivery, customer service and price. The cost ratio measures the cost of each factor as a percentage of total purchase for the supply. Arsan (2011) notes that using the cost-based system, a buyer is able to quantify the additional costs incurred if a supplier fails to perform as expected.

D. Assessment and supplier development

Abubakar & Rajput (2012) noted that supplier development practices are important components of supply chain management. They noted that these practices play key role for bringing improvement in buyer-supplier performance. Krause et al (2007) noted that the increasing dependence on suppliers and the importance they play in both the maintenance of an existing supply chain and the development of future strategic capabilities suggests a growing requirement an organisation to effectively manage and develop their suppliers.

Mahajan & Sarang (2012) observed that supplier development has two objectives, first to reduce problem of supplier by making immediate changes in the supplier’s operations and second to increase suppliers’ capability such that suppliers make their own improvement. Clarke (2007) noted that supplier development can be closely linked to the process of regular assessment. Areas requiring improvement can be identified, action plans drawn up and progress monitored. Clarke further noted that the linking of assessment systems to development programmes underlines the dynamic nature of partnerships and emphasized that the overriding concern is for progressive improvement of performance. Monahan (2005) noted that supplier development is one of the strategies used to add value to the supply chain. CIPS (2006) noted that supplier development involves embracing supplier expertise and aligning it to the buying organisation’s business need, and, where appropriate, vice versa.
FIGURE 2.1

RESEARCH METHODOLOGY

The study adopted a descriptive research design. This study collected quantitative data from 36 respondents from International House Ltd using a self-administered questionnaire with a five point Likert scaled questions. A pilot study was conducted aimed at determining the validity and reliability of the questionnaire. According to Mugenda and Mugenda (2003), in a research study, the reliability coefficient can be computed to indicate how reliable data is. A coefficient of 0.60 or more implies that there is a high degree of data reliability. The survey instrument was subjected to overall reliability analysis and was found to be highly reliable (Cronbach alpha = 0.656). It was found that the relationship between independent variables and procurement performance was highly reliable. Data collected was analyzed by descriptive analysis. In addition, the researcher conducted a multiple regression analysis and correlation analysis.

ANALYSIS AND DISCUSSION (EMPRICAL FINDINGS)

A. Pilot Study Results

| TABLE 4.1 |

The researcher selected a pilot study of 3 individuals from the organisation to test the reliability of the research instruments. The reliability of the questionnaire that was measured statistically using Cronbach’s Alpha. Internal consistency techniques were applied using Cronbach’s Alpha. The alpha values ranges between 0 and 1 with reliability increasing with the increase in value. Reliability of the scale for the constructs describing the variables of the study was found to be sufficient because all the items and composite reliability coefficients were above 0.6. Table 4.1 illustrates the results of the reliability analysis.

The study showed that alpha coefficient for the four items was above 0.656 suggesting that the items had relatively high internal consistency. It was also noted that a reliability coefficient of 0.60 or higher is considered acceptable in most social research situations. According to Mugenda & Mugenda, (2003) coefficient of 0.6-0.7 is a commonly accepted rule of thumb that indicates acceptable reliability. The findings show that there is a moderate correlation among the items. These findings clearly show that the research instrument used in the study was reliable.

B. Supplier appraisal criteria

The study sought to establish how supplier appraisal criteria influence procurement performance in real estate industry. The study also established that different supplier evaluation criteria are given different importance when selecting potential suppliers with financial stability, technical competence and quality control and management seen as major criteria in selecting suppliers. This is consistent with Wange & Cho (2007) who argued that apart from the total cost of ownership, financial stability, quality control and technical capability and competence are the most important criteria in selecting suppliers. The study also indicated that the supplier appraisal criteria used when evaluating and selecting suppliers influence the performance of the procurement function. Kavale & Mwikali (2012) indicated that the choice of criteria in supplier evaluation and selection process has a great influence on procurement performance and management.

C. Supplier appraisal practices

The study sought to evaluate how supplier appraisal practices influence the procurement performance in the real estate industry. The study established that site visits and/or use of reference checks are the most common ways of appraising suppliers and their performance. The study also established that the supplier appraisal practices determine how the supplier performs in the supply of goods and services. Prahinski & Benton (2004) had earlier indicated that supplier evaluation practices such as site visits are effective mechanisms in improving buyer-supplier relationships performance and that site visits aid the transfer of knowledge and promotes familiarity between the two parties.
The study established that the implementation of supplier appraisal results is being hampered by lack of clear structures on supplier appraisal, lack of commitment from the management, limited resources and lack of cooperation from suppliers. These findings are consistent with Kavale & Mwikali (2012) who found these factors to be among others that influence proper implementation of supplier evaluation results.

D. Supplier appraisal models

The study sought to evaluate how supplier appraisal models influence procurement performance. This study established that the weighted model is the most popular model used to appraise suppliers. The study also found that a good supplier appraisal model should have the following attributes; provide structures and discipline to the evaluation process, helps avoid selection of unqualified suppliers, reduce subjectivity during the evaluation and should hastens the evaluation and selection process.

The study also revealed that the use of a specific model influences proper evaluation of different criteria such as quality, delivery timelines, technical capability of suppliers, supplier operation control, supplier’s financial stability and net prices. As such the choice of a specific model has a big impact on the procurement performance. This is consistent with both Bello (2003) and Degraeve et al (2000) work both of whom noted that the model used in evaluating and selecting suppliers have a significant influence on the evaluation and selection results which impacts supplier’s performance and by extension the procurement performance.

E. Assessment and supplier development

The study sought to evaluate how supplier assessment and development influences the procurement performance in real estate industry. The study revealed that supplier audits, incentives and awards improve supplier performance especially on quality management. The study also found that supplier training programs enables procurement to work collaboratively with suppliers to reduce costs and improve services. Thus the study revealed that that supplier assessment and development improves efficiency and effectiveness in the procurement process. These findings are consistent with Clarke (2007) who argued that supplier development provides opportunities for information sharing, technology transfer and risk management which improves efficiency in the procurement process.

The study also established that supplier assessment and development has a great influence on procurement performance. According to CIPS (2006) supplier development enables the buyer to tap the supplier expertise to improve the purchasing organisation’s performance. This is also collaborated by Qualyle (2002) who noted that supplier development enables better relationship management which improves purchasing function performance.

CORRELATION ANALYSIS

RQ1: How do supplier appraisal criteria influence procurement performance in real estate industry in Kenya?

TABLE 4.2
The results indicates that there is a strong positive relationship (r=0.673) between supplier appraisal criteria and procurement performance. In addition, the researcher found the relationship to be statistically significant at 1% level (p=0.000, <0.01).

RQ2: What is the influence of supplier appraisal practices on procurement performance in real estate industry in Kenya?

TABLE 4.3
The results indicates that there is a moderate positive relationship (r=0.600) between supplier appraisal criteria and procurement performance. In addition, the researcher found the relationship to be statistically significant at 1% level (p=0.000, <0.01).

RQ3: How does supplier appraisal models influences procurement performance in real estate industry in Kenya?

TABLE 4.4
The results indicates that there is a strong positive relationship (r=0.736) between supplier appraisal criteria and procurement performance. In addition,
the researcher found the relationship to be statistically significant at 1% level (p=0.000, <0.01).

RQ4: How does assessment and supplier development influence procurement performance in real estate industry?

**TABLE 4.5**
The results indicates that there is a strong positive relationship (r=0.640) between supplier appraisal criteria and procurement performance. In addition, the researcher found the relationship to be statistically significant at 1% level (p=0.000, <0.01).

**Model Summary**

**TABLE 4.6**
The four independent variables that were studied, explain 57.1% of the procurement performance in real estate industry as represented by R square. This therefore means that other variables not studied in this research contribute 42.9% of the supplier appraisal on procurement performance in real estate industry in Kenya.

**ANOVA**

**TABLE 4.7**
The significance value is 0.000 which is less that 0.05 thus the model is statistically significance in predicting how supplier appraisal criteria, supplier appraisal practices, supplier appraisal models and assessment and supplier development influence procurement performance. The F critical at 5% level of significance was 2.7278. Since F calculated which can be noted from the Anova table above is 8.999 which is greater than the F critical (value = 2.7278), this shows that the overall model was significant.

**REGRESSION ANALYSIS**

**TABLE 4.8**
The researcher conducted a multiple regression analysis so as to determine the relationship between procurement performance in the real estate and the four variables. As per the SPSS generated table, the equation (Y = β0 + β1X1 + β2X2 + β3X3 + β4X4 + e) becomes:

Y= 0.177X1 + 0.072X2 + 0.352 X3 + 0.118 X4 +1.777

Where Y is the dependent variable i.e. procurement performance, X1 is supplier appraisal criteria, X2 is supplier appraisal practices, X3 is supplier appraisal models and X4 is assessment and supplier development.

The possible value of Y when all independent variables are equal to zero is 1.777. The data findings analyzed also showed that taking all other independent variables at zero, a unit increase in supplier appraisal criteria will lead to a 0.177 increase in procurement performance; this means that there is a significant relationship between supplier appraisal criteria and procurement performance. A unit increase in supplier appraisal practices will lead to a 0.072 increase in procurement performance; this means there is a significant relationship between supplier appraisal practices and procurement performance. A unit increase in supplier appraisal models will lead to a 0.352 increase in procurement performance; this means that there is a significant relationship between supplier appraisal models and procurement performance. Lastly, a unit increase in assessment and supplier development will lead to a 0.118 increase in procurement performance; this means there is a significant relationship between assessment and supplier development and procurement performance in the real estate industry. This infers that supplier appraisal methods influence the procurement performance most followed by supplier appraisal criteria, assessment and supplier development and supplier appraisal practices. At 5% level of significance and 95% level of confidence, supplier appraisal criteria has a 0.048 significance, supplier appraisal models has 0.041 and hence these two factors are the most significant as their level of significance is not greater than 0.05.

**CONCLUSION**
The crux of this study was to explore the influences of supplier appraisal on procurement performance in real estate industry in Kenya. Based on previous studies, the components of supplier appraisal were expected to have a positive with the procurement performance in real estate industry in Kenya. The output given from the findings indicate that there is a significant
positive relationship between the components of supplier appraisal namely; supplier appraisal criteria, supplier appraisal practices, supplier appraisal models and assessment and supplier development with procurement performance.

The findings also indicated that the criterion used during the evaluation and selection of suppliers determines the comprehensive suitability of the right suppliers who can help the purchasing organisation achieves a competitive advantage. The results also revealed that lack of clear structures, management support and commitment and limited resources are some of the factors that are hindering the implementation of supplier appraisal and hence influence the procurement performance. The study further revealed that a good supplier evaluation model reduces subjectivity in the evaluation process and avoids selection of unqualified suppliers. The study further revealed there are tremendous benefits to the procurement function and the organisation as a whole by assessing and developing suppliers. Undoubtedly, supplier appraisal influences the procurement performance in real estate industry in Kenya.

**RECOMMENDATIONS**

The study recommends that due to the importance and influence of evaluation criteria, organizations should choose carefully the criteria that a supplier should be evaluated against based on the needs and objectives of the organization. It is also recommended that the process of coming up with the evaluation criteria be as consultative as possible with all the stakeholders in the organization. Suppliers should also be heavily involved from the onset of the appraisal process by embracing joint performance appraisal so that the process is not seen as adversarial in the supplier’s eye.

As noted in the study, the evaluation model adopted influences the evaluation and selection decisions. Therefore this study recommends that caution should be applied when selecting the model. Considerations should be made on the objectives of evaluating the suppliers and the priority areas. The study recommends that organizations should put more effort to develop suppliers into more strategic partners in the supply chain. Through this organizations will be able to develop collaborative relationships with suppliers which will result in more effective risk management, product and/or service differentiation and cost reduction and thus achieving a competitive advantage in the supply chain.

**THEORETICAL IMPLICATIONS**

This study may help the procurement professionals to understand the role and importance of supplier appraisal in improving their performance in the ever increasing and demanding environment of value creation and cost reduction. The real estate industry may benefit from the findings of this study as it will lay a platform upon which policies and means of supplier appraisal can be established. The findings of this study will provide a platform upon which other studies on supplier appraisal can be done. It also adds value to the existing body of knowledge which can be used for future references.

**REFERENCES**


Influence of Supplier Appraisal on Procurement Performance

Peter Mungai Murigi


Supplier performance management (accessed on 3rd June 2013).


Michira, M (2013, January 15), EACC probes ex-housing boss over Shs 870m fraud. Retrieved from Standardmedia.co.ke


APPENDIX

Table 4.1: Reliability Coefficients

<table>
<thead>
<tr>
<th>Scale</th>
<th>Cronbach's Alpha</th>
<th>No. of Items</th>
<th>Comments</th>
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<td>7</td>
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<td>Supplier appraisal practices</td>
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<td>Accepted</td>
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<td>Supplier appraisal models</td>
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<td>Accepted</td>
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<td>Assessment and supplier development</td>
<td>0.75</td>
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Table 4.2 Supplier appraisal criteria and procurement performance

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<th>Supplier appraisal criteria</th>
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<tr>
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<td>0.673** Performance</td>
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<tr>
<td>Sig. (2-tailed)</td>
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<tr>
<td>N</td>
<td>32</td>
</tr>
</tbody>
</table>

**Correlation is statistically significant at 1% level (2-tailed)
Table 4.3 Supplier appraisal practices and procurement performance

<table>
<thead>
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<th>Procurement performance</th>
<th>Supplier appraisal practices</th>
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<tbody>
<tr>
<td>** Pearson Correlation</td>
<td>1</td>
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<tr>
<td>Performance</td>
<td>0.600**</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>0.000</td>
</tr>
<tr>
<td>N</td>
<td>32</td>
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</tbody>
</table>

** Correlation is statistically significant at 1% level (2-tailed)

Table 4.4 Supplier appraisal models and procurement performance

<table>
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<th>Supplier appraisal models</th>
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<td>** Pearson Correlation</td>
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</tr>
<tr>
<td>(2-tailed)</td>
<td>0.736**</td>
</tr>
<tr>
<td>Performance</td>
<td>Performance</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>0.000</td>
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<tr>
<td>N</td>
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** Correlation is statistically significant at 1% level (2-tailed)

Table 4.5 Assessment and supplier development and procurement performance

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<th>Assessment and supplier development</th>
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<td>** Pearson Correlation</td>
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<tr>
<td>Performance</td>
<td>0.640**</td>
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<tr>
<td>Sig. (2-tailed)</td>
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<td>N</td>
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** Correlation is statistically significant at 1% level (2-tailed)

Table 4.6 Model summary

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<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
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<tr>
<td>1</td>
<td>0.756*</td>
<td>0.571</td>
<td>0.508</td>
<td>1.99163</td>
</tr>
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</table>

a. Predictors: (Constant), Assessment_supplier_development, supplier_appraisal_practices, supplier_appraisal_criteria, supplier_appraisal_models
Table 4.7 ANOVA

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>Df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig</th>
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<tbody>
<tr>
<td>Regression</td>
<td>142.777</td>
<td>4</td>
<td>35.694</td>
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<td>.000</td>
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<td>Residual</td>
<td>107.098</td>
<td>27</td>
<td>3.967</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>249.875</td>
<td>31</td>
<td></td>
<td></td>
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</tbody>
</table>

a. Dependent Variable: procurement_performance
b. Predictors: (Constant), Assessment_supplier_development, supplier_appraisal_practices, supplier_appraisal_criteria, supplier_appraisal_models

Table 4.8 Coefficient of determination

<table>
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<th>Model</th>
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<th>Standardized Coefficients</th>
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<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
</tr>
<tr>
<td>(Constant)</td>
<td>1.777</td>
<td>4.693</td>
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<tr>
<td>Supplier appraisal criteria</td>
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<td>Supplier appraisal practices</td>
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<tr>
<td>Supplier appraisal models</td>
<td>0.352</td>
<td>0.245</td>
</tr>
<tr>
<td>Assessment &amp; supplier development</td>
<td>0.118</td>
<td>0.361</td>
</tr>
</tbody>
</table>

a. Dependent Variable: procurement_performance

Figure 2.1 Conceptual framework

- **Independent variables**
  - Supplier Appraisal
    - Supplier appraisal criteria
      - Financial capability
      - Technical competence & capacity
      - Quality control & management
    - Supplier appraisal practices
      - Frequency of assessment
      - Site visits/Desk audits
      - Third party appraisal
    - Supplier appraisal models
      - Weighted point model
      - Categorical model
      - Cost ratio model
  - Assessment and supplier development
    - Supplier training programs
    - Personnel transfer
    - Supplier incentives & awards

- **Dependent variable**
  - Procurement performance
    - Cost savings
    - Effective contract utilization and management
    - Customer satisfaction