DEVELOPMENT OF PAYMENT PERFORMANCE ASSESSMENT TOOLS FOR THE NIGERIAN CONSTRUCTION INDUSTRY

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DEDICATION

This thesis is dedicated to my beloved wife Hajiya Hauwa’u Aminu and children Sara (Ihsan) Abdullahi, Nusaiba Abdullahi & Muhammad Abdullahi for their endless love, support, sacrifice, and encouragement.

“Thank you for all the patience and endurance during this PhD voyage.”
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ABSTRACT

The widespread of late and non-payment in the construction industry is increasing at an alarming rate. Many researchers have investigated these problems in many countries. However, most of the studies focused on solutions based on managerial/administrative approaches emphasizing the causes, effects, reactions, and impacts. Besides, many of them tend to see the solutions to the payment problems from a legal perspective. This has led to the introduction of the legislative Payment Act in various countries of the world. Despite the rampant occurrence of late and non-payment, none of the research has looked at the criteria and attributes for evaluating client’s payment performance in the industry. This study developed and validated the payment performance assessment tools on four selected organizations. Two methodologies, the Delphi method and Analytical Hierarchy Process (AHP) were used. After three rounds of inquiries with a panel of experts, a consensus was reached on organizational culture and payment performance attributes for public and private organizations. Moreover, Spearman Correlation was run for public and private client organizational culture, and the results revealed the existence of positive relationships between client’s organizational culture and payment performance attributes when the level of significance was one percent ($r = -0.561, \text{Sig.} = 0.004$). The payment performance assessment tools were developed by integrating organizational culture and payment performance attributes. The tools were calibrated based on consensus benchmarking, ranging from 0.00-0.69 as late payment performance, 0.70-0.98 as prompt payment performance, and 0.99-1.00 as absolute/ perfect prompt payment performance. Finally, the payment performance levels of the 4 organizations were evaluated, and the results showed that organization (A) obtained 0.88 point, organization (B) recorded 0.509 point, organization (C) had 0.945 and organization (D) obtained 0.114 point. None of the organizations fell into the absolute prompt payment performance category. However, two of these organizations experienced late payment performance and the other two had prompt payment performance. The findings showed that a strong organizational culture resulted in prompt payment performance and vice-versa. This research provides payment performance assessment tools for the construction community that will be useful for clients and contractors. Besides, the present findings provide insights into a client’s payment performance level. Based on the study, the clients should focus on supportive and innovative culture to achieve prompt payment performance and it is recommended that the study be extended across regions.
ABSTRAK

Kelewatan dan kegagalan pembayaran dalam industri pembinaan berada pada tahap yang membingungkan. Di kebanyakan negara, ramai penyelidik telah mengkaji tentang masalah ini. Walau bagaimanapun, kebanyakan kajian memberi tumpuan kepada penyelesaian berdasarkan pendekatan pengurusan/pentadbiran yang memberi penekanan kepada sebab-sebab, kesan, reaksi, dan impaknya. Selain itu, ramai di antara mereka cenderung untuk melihat penyelesaian kepada masalah pembayaran daripada perspektif undang-undang. Ini telah membawa kepada pengenalan akta pembayaran perundangan, di pelbagai negara di dunia. Walau bagaimanapun, masalah kelewatan pembayaran masih berterusan. Walaupun kelewatan dan kegagalan pembayaran ini berlaku secara berleluasa tiada kajian berkenaan kriteria dan atribut bagi menilai prestasi pembayaran klien dalam industri. Kajian ini membangunkan dan mengesahkan alat penilaian prestasi pembayaran pada empat organisasi terpilih. Dua kaedah, kaedah Delphi dan Proses Hierarki Analitik (AHP) telah digunakan. Selepas tiga pusingan siasatan dengan panel pakar, satu konsensus dicapai pada budaya organisasi dan atribut prestasi pembayaran bagi organisasi awam dan swasta. Selain itu, korelasi Spearman telah dijalankan untuk budaya organisasi klien awam dan swasta, dan keputusan menunjukkan wujudnya hubungan positif antara budaya organisasi klien dan atribut prestasi pembayaran apabila tahap signifikan adalah satu peratus (r = -0.561, Sig = 0.004). Alat penilaian prestasi pembayaran telah dibangunkan dengan mengintegrasikan budaya organisasi dan atribut prestasi pembayaran. Alat tersebut dikalibrasi berdasarkan penandaarasan konsensus, antara 0.00-0.69 sebagai prestasi pembayaran lewat, 0.70-0.98 prestasi pembayaran segera dan 0.99-1.00 untuk prestasi pembayaran muktamad/sempurna. Tahap prestasi pembayaran 4 organisasi telah dinilai, dan hasilnya menunjukkan bahawa organisasi (A) memperolehi 0.88 mata, organisasi (B) mencatatkan 0.509 mata, organisasi (C) mencatatkan 0.945 dan organisasi (D) memperolehi 0.114 mata. Tiada organisasi termasuk dalam kategori prestasi pembayaran mutlak. Walau bagaimanapun, dua organisasi ini mengalami prestasi pembayaran lewat dan dua organisasi lain adalah organisasi prestasi pembayaran segera. Penemuan menunjukkan bahawa budaya organisasi yang kuat menghasilkan prestasi pembayaran yang segera dan sebaliknya. Penyelidikan ini menyediakan alat penilaian prestasi pembayaran kepada komuniti pembinaan yang akan berguna kepada klien dan juga kontraktor. Di samping itu, ia juga menunjukkan kedudukan tahap prestasi pembayaran klien. Berdasarkan kajian, klien harus memberi tumpuan kepada budaya yang menyokong dan inovatif untuk mencapai prestasi pembayaran segera dan disarankan agar kajian ini diperluaskan diseluruh wilayah.
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<td>AHP</td>
<td>Analytical Hierarchy Process</td>
</tr>
<tr>
<td>MCDM</td>
<td>Multi-Criteria Decision-Making Approach</td>
</tr>
<tr>
<td>MC</td>
<td>Multi-Choice</td>
</tr>
<tr>
<td>SMC</td>
<td>Simple Multiple Choice</td>
</tr>
<tr>
<td>MMC</td>
<td>Modified Multiple Choice</td>
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<td>JCT 98</td>
<td>Joint Contract Tribunal</td>
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<td>SFBC (1990)</td>
<td>Standard Form of Building Contract</td>
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<td>OC</td>
<td>Organizational Culture</td>
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<td>PP</td>
<td>Payment Performance</td>
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<td>GDP</td>
<td>Gross Domestic Product</td>
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<td>EF</td>
<td>Extreme Favour</td>
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<td>VSF</td>
<td>Very Strong Favour</td>
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<td>STF</td>
<td>Strong Favour</td>
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<td>SLF</td>
<td>Slight Favour</td>
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<td>Quarter</td>
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LIST OF SYMBOLS

\( V_{ar[i]}, V_{ar[j]} \) - Variable

\( a_{i,j} \) - Element of row and column

\( S \) - Solution matrix

\( R \) - Resultant matrix

\( W \) - Weight matrix,
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CHAPTER 1

INTRODUCTION

1.1 Background of the Study

Late payment, short payment, and non-payment have been the major problems faced by the construction industry worldwide. The magnitude of the problem and its impact on the growth and development of the industry differs from one country to another. Nigeria, as a rapidly developing country, in the construction industry of the country has a fair share of the never-ending problems of late payment, short payment, and non-payment. Many studies have looked into these issues from many different perspectives – legal, and management interventions. However, literature search shows that very few studies look into the issue of the criteria and attributes for evaluating payment performance in the Nigerian construction industry from the perspective of organizational culture.

This chapter deliberated on the background of the research problem that focuses on payment performance in the Nigerian construction industry. It touches on the payment problem/issues and its effect on the Nigerian construction industry. This, it is followed by research questions and problem statement. It also defines the aim, objectives, and scope of the research. It further explains the significance of the study, outlines the research methodology, results and discussions, conclusion, recommendations and the organization of the thesis.

This section presents an overview of the Nigerian economy, its growth and development, and contribution of the construction industry to the economy. Nigeria as a country is explained in details in Chapter 2. Nigeria economy was classified into three main segments which include the primary sector (the agriculture and natural resources), secondary sector (processing and manufacturing) and tertiary sectors (services) and the three structure were split into six (6) key industries namely (1)
Agriculture, (2) Industry (crude petroleum and natural gas) (3) Manufacturing (4) Building and Construction, (5) Wholesale, Retail and Trade (6) Services (Canagarajah and Thomas, 2001). The contributions of the various industries the GDP of the Nigerian economic sectors are shown in Table 2.1 in Chapter 2.

The Nigerian construction industry contribution appears to be small when compared to other sectors. Moreover, on a broader scale, the construction industry includes design and engineering firms, plant, equipment, and material suppliers, equipment rental companies and construction insurance businesses. As pointed out by (English and Sommerville, 2004), the construction industry is the key engine of growth of a country. To a certain extent, all other sectors depend or rely on the products and services of the construction industry to carry out their activities or operate their business. Studies have shown that, based on the backward and forward calculation of the economy, the construction industry is actually contributing almost 10% to the GDP (Okoye, 2016).

The significant contribution of the Nigerian construction industry to the development of the country can be seen by a number of landmark projects that have been successfully completed from the year 2000 to 2016. The industry has built almost 2000km of roads and highways across the country, developed many housing projects, built a number of prominent high-rise buildings and completed much of the country’s infrastructure facilities (Lemmens, 2011).

1.1.1 Payment Problems in Nigerian Construction Industry

In spite of the success stories, the Nigerian construction industry has its drawbacks or problems. It is plagued by the age-long problems of late payment, short payment, and non-payment. They are part of the major problems that have adversely affected the output and overall performance of the industry. Many of the payment problems or issues are well documented (Emenike et al., 2010). Payment has been the lifeblood of contractors and those who are involved in the construction industry. The problem of late, short and non-payment have some adverse effect on the industry in
particular and the country’s economy in general. Studies have shown that the problems of late, short and non-payment have resulted in serious cost and time overrun, incomplete and abandoned projects (Elijah et al., 2011 and Kontagora, 1993). It is reported by Nigeria Tribune (newspaper) of 17th November (1993) that there are about 4,000 unfinished or abandoned public projects in Nigeria worth more than N300 billion and as at 2011, there were 12,000 abandoned federal government projects nationwide worth N8 trillion (Chrejina, 2013). The main reasons for the abandonment of these projects were lack of funds and petty politics which eventually led to late and non-payment (Emenike et al., 2010).

Furthermore, in some cases, the late and non-payment forced several construction companies out of business (Schwartz et al., 2010). The problems also seemed to have pushed up tender prices and increased the number and value of claims for variations and loss and expense. (Mosk, 2012). Contractors are always the victim of late and non-payment in the construction industry. Therefore, there is a need for contractors to understand the late and non-paying organizations. This study seeks to develop payment performance assessment tools by interpreting the client's organizational culture and payment performance.

1.1.2 Organizational Culture and Performance in other Industry

Many other industries such as financial, manufacturing and services seem to place organizational culture as an important component in improving organizational performance. Many frameworks, models and tools were used for organizational performance assessment and improvement in other industries. This is evidenced by the various studies on the importance of organizational culture and its relationship with the output and overall performance of business enterprises. For example, Ojo, (2014) and Salau et al, (2014) and reported the impact of organizational culture on corporate performance with data from the Nigerian banking industry. Naranjo-Valencia, et al., (2016) reported the links between organizational culture, innovation, and performance in Spanish companies, on the similar studies Zhu et al., (2016) reported the impact of organizational culture on concurrent engineering, design-for-safety, and product safety.
performance and their studies all suggested that organizational culture influences organizational performance and it enhances companies’ productivity and overall performance. Emenike et al., (2010) and Abdul-Rahman et al., (2013) also pointed out that one of the causes of the problem of payment in Nigeria is local culture. This problem and many other related problems in the construction industry are deeply rooted in industrial culture or its organizational culture. Understanding the problem of late payment performance means addressing these related problems. Addressing these problems will, in turn, be helpful to the clients and contractor to understand payment performance for improvement purpose and investment decisions.

1.1.2.1 Organizational Culture Research Approaches

The investigation of organizational culture has been going on for quite a while (Trice and Beyer, 1993). It can be traced as far back as 1930 to Hawthorne research at the Western Electric Company in Chicago, Illinois (Mohanty and Rath, 2012). Organizational culture has attracted numerous attention in the research since the 1980s, and the present consideration on the organizational culture arose because U.S. firms were experiencing issues in competing with their partners in other countries especially Japan (Schein, 1990 ; Trice and Beyer, 1993). Previous studies show that national culture alone could not clarify all the difference in performance between the U.S and foreign firms (Tayeb, 2013). Thus, researchers saw the need to recognize and differentiate between national culture and organizational culture within a country, especially with regards to organizational performance and organizational effectiveness (Wilkins and Ouchi, 1983).

There are two areas of research in the field of organizational culture which include, Measurement of the organizational culture, and the influence of organizational culture on the organization’s performances (Cui and Hu, 2012). The culture within the organization represents the way employees perform tasks, set goals and manage the available resources to accomplish the objectives of the organizations and it also influences the way people make decisions (Thompson, 1999). The identification of the
criteria for assessing organizational culture and attributes of payment for evaluating client’s payment performance is the focus of this study.

1.1.2.2 Client’s Organizational Culture and Payment Performance

The client is the financier of the construction projects; he/she is the employer of contractors. Clients in the Nigerian construction industry are subdivided into two: public and private clients. Public clients comprise the federal, state, and local governments, while private clients are private companies or individuals involved in construction projects. Therefore, the client’s organization of either (public or private) is an important entity in achieving project success (Omole 1986). The client’s organization may have a culture that enhances the payment performance within the organization.

The culture that exists within an organization is important for some reasons. According to Cui and Hu, (2012), Kotter and Heskett (1992) and Thompson (1999), for an organization to be effective, the comparison must exist between the organization’s values, its resources, and the environment. Schein (1990) defines culture as the shared set of attitudes, beliefs, and values. Hofstede's (2001) onion model of organizational culture submits that values are the core of organizational culture and that “practices” are the manifestation of those values.

Payment performance attributes are the elements that affect the process and procedure of making payment to the contractors. However, the attributes are also the drivers of the payment performance outcomes and the link the various payment processes that lead to prompt payment performance or late payment performance. The payment performance of an organization may be related to the culture of that organization. Consequently, in the construction industry different organizations have their distinct cultures, and therefore, their performances usually are conducted in relation to their perceived culture. In relation to this, payment performance could be improved by identifying the client’s organizational cultures and their payment performance attributes. Late and non-payment performance and their negative effect
on the Nigerian construction industry are alarming. Lack of clear criteria and attributes for evaluating client payment performance motivated this study.

1.2 Problem Statement

The preceding discussions brought to light the gravity of the payment problems in the Nigerian construction industry (NCI) and its adverse effect on the industry, and the nation, as a whole as shown in Table 2.4. The issue of payment has been studied from numerous points of view, including technical/managerial perspective (Emenike et al. 2010; Ansah, 2011), administrative interventions approach (Wu-Kumaraswamy and Soo, 2008) and legislative interventions approach (Cheng et al., 2010). However, it appears that only a few studies considered the criteria and attributes of evaluating payment performance in the Nigerian construction industry from a socio-cultural perspective (organizational culture). The situation is unlike in many other industries such as financial, manufacturing and services industries. There are many researches on the organizational culture and organizational performance and a lot of frameworks, models, and tools for improvement/assessment of corporate performance in the non-construction industries.

Nonetheless, numerous studies for example (Hofstede et al., 1990; Awadh and Saad, 2013; Nukic and Huemann, 2016; Naranjo-Valencia et al., 2016; Thompson 1993; Kotter and Heskett 1992). affirmed that organizational culture plays an important part in determining the success or failure of an organization, and its influence on personal and organizational performance. This suggests that apart from the technical, administrative and legal elements, work culture within the clients’ organizations is also one of the major factors that contribute to the problems of late and non-payment performance in the Nigerian construction industry.

Yet, there are very few studies that look into the criteria and attributes of evaluating payment performance from the perspective of organizational culture, behaviour, and attitude. In this context, it is most apt to emulate the financial, manufacturing and services industries where many studies have been carried out, that
developed different frameworks, models and tools from the perspective of organizational culture, behaviour, and attitude toward organizational performance. Most of these studies indicate that organizational culture is a major element influencing the way people think, make decisions, perform tasks, set goals and administer the necessary resources to achieve organizational objectives that affect output, productivity, and efficiency.

1.3 Research Gap

Despite the poor image of the Nigerian construction industry resulting from the effect of late and non-payment performance, there is no criteria and attributes that can be used to evaluate the payment performance in the construction industry. As reported in the newspaper, seminars, and conferences, there are incomplete public projects in Nigeria worth more than N300 billion (Chrejina, 2013) and as at 2011, worth N8 trillion. The principal reasons behind this problem were late and non-payment. and the payment performance of clients in Nigeria is traced from the report of abundant projects, complained by the contractors affected and worries from the clients about projects been abundant were in form of reports (Emenike et al, 2010; kontagora, 1993).

Based on these, this study identifies the following research gap to kick-start the process of developing payment performances assessment tools for the Nigerian construction industry. Currently, there are no assessment tools for measuring the payment performance in the construction industry.

Based on this identified gap, this research will contribute to the body of knowledge by identifying the client’s organizational culture, organizational payment performance attributes and establish the correlations between these variables with a view to developing payment performance assessment tools for the Nigerian construction industry. In pursuance of these, the following research questions were raised.
1.4 Research Questions

1. What are the criteria of organizational cultures of both public and private clients in the Nigerian construction industry? This question seeks to generate information from the literature on organizational culture that will be used to determine the organizational culture of the client in the construction industry in Nigeria.

2. What are the attributes of the payment performance of the clients in the Construction Industry? This question is aimed at exploring the information from the literature to generate a survey questionnaire using expert consensus to established payment performance attributes in the Nigerian construction industry.

3. Does organizational culture correlate with attributes of payment performance? This question is aimed at identifying whether the organizational culture has a relationship with payment performance attributes.

Currently is there any tool that can be used to assess the payment performance in the construction industry? This question is aimed at developing payment performance assessment tools and validation of the tools.

To answer these questions, and pursuant to the main aim of the research the following objectives were developed

1.5 Objectives

(a) The aim of this study is to develop payment performance assessment tools with a view to assessing the client’s payment performance in the construction industry. The objectives of this research are:

(b) To identify the public and private client’s organizational culture in the construction industry (components of the tools).
To identify the public and private client’s attributes of payment performance in the construction industry (components of the tools).

To determine the relationship between organizational cultures and the attributes of payment performance.

To develop and validate payment performance assessment tools for the Nigerian construction industry.

1.6 The Significance of the Study

The study provides a new area in studying the payment problems in the construction industry in different approaches by highlighting the payment issues from the organizational culture perspective down to the attributes that control the payment performance in either positive or negative directions. Also, the study develops the payment performance assessment tools, that can be used by clients or contractors. This would benefit client’s organizations by computing their payment performance level, for improvement purpose. Furthermore, the contractors can also use the outcome of the study to know the prompt payment performance organizations and late payment performance organization for investment decision purposes.

1.7 Scope of the Research

The Nigerian construction industry is very wide, therefore, the scope of this study is to establish the organizational culture and payment performance attributes of 24 organizations in the Nigerian construction industry (Details process explained in Chapter 4). The study focused on 12 public organizations and 12 private organizations. This involved the organizations retired staff, contractors and current client’s payment staffs as respondents.

The process of data collection consists of three rounds Delphi survey for establishment of organizational culture and payment performance attribute for clients
in the construction industry. The study adopted the analytical hierarchy process (AHP) and established the weight of organizational culture and payment performance attributes and used in payment performance assessment tools development. The study is limited to construction industry organizations. Subsequently, the issue established is generalized to issues of payment performance in the construction industry.

1.8 Contribution to knowledge

By looking at the economic role the construction industry played in Nigeria and its horrible status in terms of late and non-payment performance to the contractors, this study contributes to the body of knowledge by through the following:

i. Identifying the culture of clients in the construction industry and payment performance attributes.

ii. The relationship between the organizational culture and the attributes of payment performance

iii. Developing the payment performance assessment tools for the Nigerian construction industry. And validating the tools using some selected public and private organizations.

1.9 Organization of the Thesis

This thesis is organized into six chapters as described below:

Chapter 1 highlights the introduction of the research and describes the context within which the research is undertaken; The research problems, aim, and objectives are also reported in this chapter, which was further broken down into research questions. Moreover, the chapter presents the scope, study gap and the contributions to the knowledge of the research are also enumerated in this chapter.
Chapter 2 presents the review of the literature on payment related issues/problems in the construction industry in order to provide some contextual information, which is considered important to understanding the background of the research. The problems and challenges of the Nigerian construction industry and the strategies that different countries used to address payment problems.

Chapter 3 discusses the theory of culture, organizational culture, organizational culture and performance and different frameworks and models used for identifying organizational culture,

Chapter 4 highlights the research methodologies, the research paradigm and where this research is situated. The chapter further explains the research design and data collection strategies used in this study.

Chapter 5 presents the data analysis and discussions of the results. The findings in this study were used in developing the payment performance assessment tool and the chapter concludes with the validity and reliability of this research.

Chapter 6 presents the conclusion drawn from the findings of the study. The chapter also discussed the organizational culture and payment performance attributes of the organizations assessed which is an indication of the level of payment performance in the Nigerian construction industry. Moreover, the chapter suggested some recommendations, especially to the public and private clients on the culture change to improve their payment performance. Finally, the chapter recommends improvement and concludes with some suggestions for further research.
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