THE IMPACT OF FIRM TYPE, SIZE AND EXPERIENCE ON PROFESSIONAL SERVICES OF ARCHITECTURAL FIRMS IN NIGERIA

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ABSTRACT

Clients have expressed dissatisfaction about services of professionals as a result of poor quality of service and errors in documentations resulting into overrunning project cost and delayed completion. This study investigated the influences of firms' types, size of firms and experience of firms on provision of professional services of Architectural firms in the process of meeting the expectations of the client. Questionnaires was used to collect data for the study through random sampling. The results of ANOVA showed that firm types had no significance on services across the stages of service, firm size showed significance while the experience of the firm showed significance across the inception and the design stages. Multiple regression analysis showed that the variables cumulatively explained 3.9% (at $p < 0.05$) of the variance in the overall professional services of architectural firms. Among the variables, only the firm size showed a significant impact on the overall professional services with a p-value of 0.003. The firm type and experience of firm had no impact on the overall professional services. The findings serve as a guide to the clients in making choice of consultancy firms for their project, and as a guide to the consultancy firms in order to remain competitive in the globalized industry.

Keywords*: Architectural firms, Building Projects, Clients, Firms' Characteristics, Professional Services*

INTRODUCTION

In construction project, interrelated roles are played by different service providers or group of service providers. The industry has the uniqueness of incorporating these service providers or professionals at different project phases in order to deliver the project (Hughes, 2012). Meanwhile, clients in the construction industry have expressed dissatisfaction towards the service providers due to inferior quality, rework, defects in completed projects, errors in design, errors in documentations resulting into overrunning project cost and delayed completion (CIDB, 2011).

In most cases, these defects emanate from poor quality of service and incompetency of professionals who are at the very core of documentation and management of the projects (Chang, Proverbs & Oduoza, 2006). Aiyetan, Smallwood and Shakantu (2014) identify conflicting design information, delays in issuing revised drawings, dimensional inaccuracies as critical factors emanating from incompetency in design and resulting into delays in project delivery time. Oyedele, Jayeoba, Kadiri, Folagbade, Tijani and Salami (2015) emphasize further that these deficiencies have contributed to poor construction quality performance resulting into client dissatisfaction in the Nigerian construction industry. Therefore, the aim of this study is to assess the influence of firms' types, size of firms and experience of firms on provision of professional services of architectural firms in the building delivery process for the client.

Professional Services in Building Projects

Consultancy services in building projects are interconnected and compliments each other (Brandl, 2010). The services are normally provided by Architectural, Engineering and Quantity Surveying firms and are largely based on knowledge acquired by the human capital of the firms (Jewell, Flanagan & Anac, 2010). This implies that activities in building projects are team work and the project delivery process is rooted in team practice approach where each member of the team performs unique roles (Dainty, Cheng & Moore, 2005; Kwofie, Amos-Abanyie, Afram, 2016). According to Olatunde, Ogunsemi & Oke (2017), the composition of construction team members has a significant effect on the completion time of construction projects, and recommended that effort should be made in establishing roles of team members when they are appointed. The team could either be within the same organization or put together as consultants from different organizations as a unified team for the delivery of the project design (Oyedele, 2013). The team work of Architecture, Engineering and Quantity Surveying of PSFs are deployed to perform technical and design related activities for the clients (Sporrong, 2014). Thus, co-ordination, communication, commitment, competence, compatibility and co-operation are essential ingredients within the team for the success of the project assignments (Oyedele, 2013). According to Yang and Peng (2008), professional services in building projects are delineated into various stages of activities namely: planning and feasibility, design, tender, construction and close out. These services involve Architecture, Engineering consulting/design and Quantity Surveying (Von Nordenflycht, 2010; Jewell et al. 2010)

Firms' Characteristics

Architectural firms are typical professional service firms (Demirbag, McGuinness, Akin, Bayyurt, & Basti, 2016). Von-Nordenflycht (2010) reviewed publications on different type of professional services between 1990 and 2007. The study established that Architecture, Engineering consulting/design, and Quantity Surveying services was categorized as professional service providers. The research of Canavan, Scott and Mangematin (2012) located Architectural practice as a prominent professional service in the building industry. Characteristics of professional service firms (PSFs) have been studied as it affects their performance. Kamal, Yusof, & Iranmanesh (2016) considered type of firm, business scale, firms' major client, firm age and firm size in assessing innovation creation and adoption by firms. In the same way, firm's age, firm's culture, firm's structure, ownership, organisation structure, workforce and business strategy have been used as catalyst of firm performance in respect of knowledge management, innovation and service quality (Oluwatayo & Amole, 2011; Oluwatayo & Amole, 2013; Kamal et al. 2016); (Nguyen, Nguyen, Nguyen & Tran, 2017).

The firm's characteristics or attributes in respect of years of experience, ownership structure (limited liability, partnership and sole proprietorship) and the staff strength (number of employees) have been used by Roxas, Battistis and Deakins (2006), Moohammad, Yusof and Kamal (2014) and Kamal et al. (2016) in organization innovations studies. Ness (2010) conceptualizes human resource of PSFs as an asset, emphasizing that they contribute meaningfully to profitability of firms. These characteristics form the primary assets of PSFs (Kettinger, Park and Smith, 2009), and remains the major source of competitive advantage and the determinants of performance of professional service firms (Roxas, Battisi & Deakins, 2013). The consultancy firms' services are influenced by these attributes which in turn affect their performance. This forms part of a process of collecting, evaluating and utilizing information about consultants for decision making (Ng & Chow 2004). This affects service outcome quality which is a reflection of strength and ability of firms in performing a prospective consultancy services satisfactorily.

Architectural firms in Nigeria are mostly small in size; and Lorraine, Andre, Joris and Mickey (2007) while studying organizations that are knowledge driven in practice categorize them as micro firm (1-9 employees), small firms (10-49 employees) and medium sized (50-99 employees). Soetanto (2002) emphasizes general experience of firm including technical experience in the specific project or tasks to be done, overall experience of the firm, how long the firm been in business (years of experience) and the staff strength as important attributes in the construction sector. Urem, Alcota, and An (2007) studied

firm type or ownership status as publicly owned, privately owned, partnership or sole proprietorship. Jewell, Flanagan, and Lu (2014) however states that many construction professional service firms in the developed countries have evolved from a partnership and limited liability partnership, to either a publicly-quoted firm, or a firm controlled by a Trust. Ownership through a Trust is when on employee ownership is based on Trust rather than control by the Partners or (public) shareholders, which energized the spirit of commitment to the organization. These characteristics are summarized in Table 1 below.

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Table 1 Summary of characteristics of Professional Service Firms

Author	Characteristics	Type of Study
Andre, Joris and Mickey (2007)	Size of firm	Knowledge management
Kettinger, Park and Smith, (2009); Ness (2010)	Human resource	Profitability of firms
Oluwatayo & Amole (2011)	Workforce and business strategy	Architectural services
Oluwatayo & Amole (2013)	Ownership characteristics and Organisation structure	Architectural services
Roxas, Battistis and Deakins (2006); Moohammad, Yusof. and Kamal, (2014)	years of experience, ownership structure and staff strength	Organisation innovation studies
Jewell, Flanagan, and Lu (2014)	Type of firm	Construction services
Kamal, Yusof and Iranmanesh (2016)	Type of firm, business scale, firms' major client, firm age and firm size	Innovation creation and adoption
Nguyen, Nguyen, Nguyen and Tran, 2017	Ownership structure	Security services

These characteristics enable firms to provide the appropriately qualified staff to the project and complete the required services within a time frame. This study attempts to extend the study of effects of the number of years of experience of the firm, type of firm (limited, partnership and sole proprietorship) and size of employees of architectural firms as a PSFs who are normally engaged to provide professional services for clients' building projects. Most of the studies in Table 1 were for environment outside Nigeria except Oluwatayo & Amole (2011) and Oluwatayo & Amole (2013). The two studies considered ownership characteristics, workforce and business strategy to evaluate performance. This study however adopted years of experience, ownership structure and staff strength as variables of influence in provision of Architectural services in Nigeria.

RESEARCH HYPOTHESES

The following hypotheses were proposed for the interaction between firm type, firm size, firm experience and professional services.
H1: The type of firm has a positive and significant effects on professional services.
H2: The size of firm has a positive and significant effects on professional services
H3: The experience of firm has a positive and significant effects on professional services

METHODOLOGY

The population consists of architectural firms who are involved in recently completed or on-going building projects that have reached advanced stage of completion for both public and private clients. The sample frame consists of the list of Architectural firms that were registered to practice in Nigeria (ARCON, 2014). The random sampling method was used to select the firms in the study, which was the unit of data collection and analysis. In order to arrive at an acceptable sample distribution, the sample size was calculated using the following formula as posited by Udofia (2011).

$$\text{'n'} = N \, / \, 1 + N(e^2) \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots \quad \textbf{(i)}$$

where n = sample size, 1 = Unity; e = Level of significance = 0.05; N = Universe or population =970. 'n' = 970 / 1+ 970 (0.05^2) =285. To arrive at a reasonable response rate, 30% of 285 was added, given a sample size of 371.

Random sampling technique was used to select the sample size from six cities where greater percentage of firms were located. These cities were Lagos, Abuja, Port Harcourt, and Ibadan. The questionnaires were hand-delivered using survey assistant. 371 questionnaires were distributed and 270 (73%) were received back for the analysis

Data Measurements

This section was about the characteristics (the independent variables) of the consultancy firms that participated in the building projects of the clients. The attributes were categorized into three namely, type of firm, experience of firm (in number of years) and size of firm (number of employees). Type of firms are categorized as Sole Proprietorship (identified as 1), Partnership (identified as 2) and Limited Liability (identified as 3). Experience of firm represents the number of years the firm has been in practice in Nigeria. The variable is categorized into three intervals namely: 1-10 years (short experience), 11-20 years (average experience) and above 20 years (long experience). Size of firm was measured using the number of employees. It was categorized into three intervals namely: 1-10 (micro firm), 11-20 (small firm) and above 20 (medium firm). The provision of professional services (the dependent variable) by architectural firms were sub-divided into stages of inception, design, tendering and construction. The respondents were to choose Yes (if provided), represented by 1 and No (if not provided), represented by 0 for a particular project.

RESULTS

The questionnaire used to collect data for this study was administered to the respondent of resulted in response rate as analysed in Table 2 below. The result shows that 371 questionnaires were distributed and 270 (73.00%) were received back for the analysis.

Table 2: Descriptive Results of the Response to Research Instruments

Questionnaire	Number	Percentage
Administered	371	100.00
Returned and used for the study	270	73.00

Respondents' Characteristics

The features of the respondents of this study were investigated for an understanding of persons who supplied the data used for the study. For the investigation five features namely: respondents' gender, academic qualification, professional affiliation, cadre and experience were selected. The distribution of the respondents into the sub-variables of each feature was analysed. The results are presented in Table 3.

Table 3: Descriptive results of the bio-data Information of the Respondents in Consultancy Firms

Variables	Number	Percentage
Gender		
Male	198	73.3
Female	72	26.7
Total	270	100.0
Highest Academic qualification		
HND	60	22.2
Bachelor	44	16.3
PGD	85	31.5
Masters	75	27.8
PhD	6	2.2
Total	270	100.0
Professional cadre		
Graduate	142	52.6
Corporate	88	32.6
Fellow	40	14.8
Total	270	100.0
Professional Experience		
1-10 Years	130	48.1
11-20 Years	73	27.0
Above 20 years	67	24.8
Total	270	100.0

The descriptive results of the bio-data of the respondents to the study are shown in Table 3. The table revealed that the majority of the respondents (73.3%) are male, while 26.7% of the respondents (26.7%) are female. This reveals that more male participated in this study than female. The result also shows that 16.3% of the respondents in Consultancy firms had BSc, 27.8% had Masters' degree and 22.2% had Higher National Diploma as their highest academic qualifications. Also, 31.5% had PGD as their highest qualification while 2.2% had PhD. The results indicated the respondents in client organization had adequate academic qualification with HND as minimum qualification.

The analysis of the cadre of membership of professional bodies in Table 2 shows 52.6% are in graduate cadre, 32.6 in corporate cadre and 14.8% are also fellowship cadre in their professions. The results also revealed that 48.1% had 1-10years experience on the job, 27.0% had 11-20years experience while 24.8% had more than 20years experience on the job. The results show that the respondents of the study are made up of professionals with relevant experience in the industry.

Influence of Firm's Characteristics on the Level of Provision of Professional Services of Firms

The effects of the attributes of consultancy firms on provision of professional services was investigated. The hypothesis formulated states that there is no significant difference in the provision of professional services based on the attributes of consultancy firms. The attributes selected are firm type, size and experience. The sub-variables of firm type are sole proprietorship, partnership and limited liability company, the sub-variables of firm size are micro firm (0-10 employees), small firm (11-20 employees) and medium firm (over 20 employees). While the sub-variables of firm experience are short experience (0-10 years), average experience (11-20 years), and long experience (over 20 years). The provision of professional services was measured using services at stages of inception, design, tendering and construction. as discussed in section. The hypothesis was tested using ANOVA at $p <$ or equal to 0.05. The rule for the rejection of the hypothesis is when the p-value is $<$ or equal to 0.05, but when p-value is > 0.05, the test accepts the hypothesis. The result of the test of hypothesis are presented as follows.

Influence of Type of Firm on the Level of Provision of Professional Services

Table 4 below shows that the p-value for the test of difference in the level of provision of professional services at inception, design, tendering and construction stages between sole proprietorship, partnership and limited liability consultancy firms are higher than the critical p-value (0.05) for all the consultancy firms evaluated

Table 4: Summary of One-Way Analysis of Variance showing the difference between the provisions of professional services based on Types of Firms

Stage of Services	Overall Mean score	Sole Proprietorship	Partnership	Limited liability company	F-Stat	P-value	Remarks
Inception stage	.968	.967	.967	.9735	.317	.728	NS
Design stage	.993	1.000	.985	1.0000	2.992	.052	NS
Tender stage	.998	.997	.9978	1.0000	.244	.783	NS
Construction stage	.987	.993	.9840	.9825	2.323	.100	NS
Overall Services	.986	.990	.9813	.9872	2.724	.067	NS

The test results in Table 4 accepts the first hypothesis (H1). The results indicate that the difference in the level of provision of professional services at inception, design, tendering and construction stages between sole proprietorship, partnership and limited liability consultancy firms is not significant. The implication of the results is that the type of firm does not have effect on the provision of professional services by consultancy firms.

Influence of size of firm on the level of provision of professional services

The second hypothesis was tested for significant difference in the level of provision of professional services between micro, small and medium consultancy firms. The results are presented in Table 5.

Table 5: Summary of One-Way Analysis of Variance showing the difference between the provision of professional services based on the size of firm (Staff Strength)

Stage of Services	Overall MS	Micro firm (1-10) MS	Small firm (11-20) MS	Medium firm (Above 20) MS	F-Stat	p-value	Remarks
Inception stage	.968	.994	.929	.985	29.868	0.001**	SS
Design stage	.993	1.000	.982	1.000	3.997	0.019**	SS
Tender stage	.9980	1.000	.997	.994	1.187	0.306	NS
Construction stage	.987	.990	.989	.975	3.228	0.041*	SS
Overall Services	.986	.995	.974	.986	.16.398	0.001**	SS

The results show that the p-values (0.001, 0.019, 0.041 and 0.001) for the test of difference in the level of provision of professional services at inception, design, construction and overall project delivery between micro, small and medium architectural firms are less than the critical p-value (0.05). Therefore,

the test rejects the hypothesis. The result indicated that the difference in the level of provision of professional services at inception, design, construction and overall project delivery between micro, small and medium architectural consultancy firms is significant for architectural firms. The implication of the results is that the size of firm has effect on the level of provision of professional services at inception, design, construction and overall project delivery by architectural firms. However, at the tendering stage the critical value is greater than 0.05 (0.306), accepting the hypothesis. This means that the size of firm has no effect on the provision of professional services at the tendering stage.

A close examination of Table 5 shows that micro architectural firms provide the highest level of professional services at inception, design, tendering, construction stages and overall project delivery (MS at inception = 0.99; MS at design = 1.00; MS at construction = 0.99; MS at overall =0.99). They are followed by medium architectural firms (MS at inception = 0.98; MS at design = 1.00; MS; MS at construction = 0.97; MS at overall = 0.99), while small architectural firms provide the least level of professional services (MS at inception = 0.93; MS at design = 0.97; MS at construction = 0.99; MS at overall = 0.97).

Influence of firms' experience on the level of provision of professional services

The third hypothesis was also tested for significant difference in the level of provision of professional services between consultancy firms with short, average and long experience. The results are presented in Table 6.

Table 6: Summary of One-Way Analysis of Variance showing the difference between the provisions of professional services based on experience (number of years)

Stage of Services	Overall MS	Short Experience (1-10) MS	Medium Experience (11-20) MS	Long Experience (Above 20) MS	F-Stat	p-value	Remarks
Inception stage	.968	.986	.947	.968	8.352	0.001**	SS
Design stage	.993	1.000	1.000	.984	3.387	0.035	SS
Tender stage	.998	1.000	1.000	.984	1.400	0.248	NS
Construction stage	.987	.992	.988	.985	0.538	0.584	NS
Overall Services	.986	.994	.983	.985	0.245	0.088	NS

*Significant at the 0.05 level
Note: NS- Not Significant, SS- Significant, N-Number, MS- Mean Score, p-value- Critical value

Table 6 shows that the p-values (0.001 and 0.035) for the test of difference in the levels of professional services at inception and design stages between architectural consultancy firms with short, average and long experience are less than the critical p-vale (0.05). Therefore, the test rejects the hypothesis. The results indicate that the difference in the level of provision of professional services between architectural consultancy firms with short, average and long experience is significant. The implication of the results is that the experience of architectural consultancy firms has significant effect on the provision of professional services at inception and design stages.

Table 6 further shows that the architectural consultancy firms with short experience provide the highest level of professional service (MS=0.99) at inception stage, followed by architectural consultancy firms with long experience (MS=0.97), while architectural consulting firms with average experience provide the least level of professional services (MS =0.95). The results also show that architectural consultancy firms with short and average experience provide the highest level of professional services (MS=1.00), while architectural consultancy firms with long experience provide the least level of

professional services. The p-values for the test of difference in the level of provision of professional services between architectural consultancy firms with short, average and long experience at tendering, construction and overall project delivery stages are higher than the critical p-value (0.05). This indicates no difference at these stages, implying that they do not have any effect on the provision of professional services.

Regression Analysis

To establish further which of these variables can positively predict provision of professional services, multiple regression analysis (MRA) was carried out for the data. The results of the MRA are presented below.

Table 7: Model Summary

Model	R	R-square	Adjusted R-square	Standard Error of the Estimate
1	0.183	0.034	0.025	0.03073

Predictors: (Constant), Type of firm, Size of the Arch. firm, Experience of Architectural firm (in years).
Dependent Variable: Professional Services

Table 8: ANOVA

	Model	Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.011	3	.004	3.835	.010[b]
	Residual	.313	267	.001		
	Total	.323	270			

Dependent Variable: Professional Services
Predictors: (Constant), Size of the Arch. firm, Experience of firm (in years), Types of firm

Table 9: Regression Coefficients

Variable	Unstandardized coefficients	Standard Error	Standardized Beta (β)	t- value	Sig
(Constant)	.998	.006		158.265	.000
Experience of firm (in years)	.001	.002	.014	.246	.806
Types of firm	-.001	.003	-.029	.480	.631
Size of the Arch. firm	.008	.003	.188	2.978	.003

Dependent Variable: Professional Services

The MRA model in Table 7 shows (Model summary) show the R^2 for the three variables to be .034. This means that the three predictors variables together explained 3.4 percent in the variance of the professional services of consultancy firms, significant by F-value of 3.835,   p< 0 .05 (.010) as shown Table 8. The results of the Multiple Regression Analysis (MRA) presented in Table 9 show that only firm size had significant effect on the professional services, beta value= -0.188 at p < 0.05 (0.003) in the model. This accepts hypothesis H2 which states that firm size has positive and significant effect on professional services. The result shows that firm type (p = > 0.05 = 0.806) and firm experience (p = > 0.05 = 0.806) do not have any significant effect on professional services. Therefore, hypothesis H1 which says firm type has a significant effect on professional services and hypothesis H3 which says that firm experience has a significant effect on professional services are rejected.

DISCUSSIONS AND CONCLUSION

The results of the MRA conducted for the study as shown in Table 7 indicates that the three firm characteristics examined in the study (firm type, firm size and firm experience) cumulatively explained 3.4 percent of the variance in the professional services among architectural firms in Nigerian building industry. The findings of the study based on the type of firm revealed no significant effects on the provisions of professional services across the selected professionals. The p-value for architects at all the stages of inception, design, tender and construction was greater than the critical value of 0.05. This implies that the type of firm in terms of sole proprietorship, partnership and limited liability did not have any impact on the level of professional services provided by the different consultancy firms in building projects.

These findings are consistent with the research results of Nguyen, et al (2017); Mohammed et al. (2014), and Oluwatayo and Amole (2013). Nguyen et al. (2017) findings on ownership structure of firms and performance of professional service firms indicated a significantly negative relationship. The study of Mohammed, et al (2014) was on firm characteristics on innovation practices. It was found that the type of firm did not have any significant impact on the innovation practices of consultancy firms in the building industry, and therefore were not statistically supported. Oluwatayo and Amole (2013) concluded that there was no direct relationship between ownership characteristics and firm performance of architectural firms. This also supported earlier study of Demsel and Villalonga (2001) which concluded that the legal form of ownership of architectural firms did not directly influence the financial performance of firms. This result showed that the hypothesis which stated that there is no significant difference in the level of provision of professional services based on type of firm was accepted.

The provision of professional services based on the size of firm for architectural services was significant at the inception, design and construction stages with $p < 0.05$. The p-value for overall services was also less than the critical value of 0.05. However, the size had no impact at the tender stage. This is in agreement with practice as level of architectural services at the tender stage are not always very significant. Kaguri (2013) also found that firm size had a statistically significance influence on firm performance. The result also confirmed the assertion of Ness (2010) that people are an asset in an organization. It showed the importance of the workforce to the performance of firms. This means, for an organization to remain competitive and remain positive, the human resource must be given adequate attention, resulting in long term impact on the success of the projects (Xia, Chan & Yeung, 2009).

On the effect of the age of firms, only architectural services. had a p-value that is less than the critical value of 0.05 at inception and design stages. This is consistent with the findings of Kaguri (2013), and Kamal, Yusof and Iranmanesh (2016) which concluded a significant positive influence of firm's age on the performance and innovation of construction firms. However, this is in contrast with Mohammed et al. (2014) which stated that firm age was not significant on consultancy firm's innovation practices. In conclusion, for client to get value for their investments it is recommended that the client should always make concerted efforts to establish the staff strength of consultancy firms before they are engaged or commissioned to offer professional services. This can be done by enforcing the requirements of Public Procurement (2007) in Nigeria. The requirements make it mandatory for public procurements for construction projects to undertake pre-qualification exercise before such an organizations are engaged. This procedure is to get value for money that are invested in public infrastructures.

Suggestion for Further Studies

The study established the effect of firms' characteristics on professional services of Architectural practice. Meanwhile, provision of professional relies heavily on the skills and competence that are inherent in individual members of the firm. Therefore, further studies on the effect of personality traits on the professional services of firms are suggested to complement the findings of the study.

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