

An Assessment of Exhibited Drivers of Mentoring in Construction Professional Firms: A Case of Nigerian Quantity Surveying Firms

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Abstract: The article assessed the exhibited drivers of mentoring practices in construction professional firms in Nigeria intending to improve how mentoring schemes are implemented in respective construction firms. A survey design was utilised in assessing the level of knowledge, mentoring concept adoption and the exhibited drivers of mentoring relationships in these firms. Quantity surveying firms in Abuja, Nigeria were sampled with a structured questionnaire. Percentage, mean, one-sample *t*-test and factor analyses were undertaken for the analysis of the data. The study reveals there is a good level of knowledge of mentoring concept but not so much with the adoption in individual firms. This connotes that there is a problem with the adoption of mentoring concept in construction professional firms despite knowledge of the concept by the professionals. Also, the study revealed the exhibited drivers of mentoring practices in construction professional firms. The findings show the exhibited drivers of mentoring practices in construction professional firms and recommendations were proposed to further the adoption and implementation of these drivers to ensure the success of mentoring practices in construction professional firms. This paper reveals the exhibited drivers of mentoring practices in Nigerian construction professional firms and provides areas that require attention for the successful implementation of mentoring schemes in construction firms.

Keywords: Drivers of mentoring, Mentoring concept, Mentoring practices, Construction professional firms, Nigeria

INTRODUCTION

The construction industry is constantly evolving and as a result, it has witnessed the development and adoption of several new initiatives aimed at improving the construction process and meeting the ever-changing needs of clients. For example, Ashworth (2012) posited that new strategies in procurement for the purpose of improving the communication system and reducing the likelihood of situations that can negatively affect project objectives are continuously developed, while Rimmington, Dickens and Pasquire (2015) opined that to integrate the construction process, information technology and computers are being used for sharing data/information electronically. Other initiatives include lean construction, total quality management and partnering which are geared towards improving the efficiency in the construction industry.

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This unending development of initiatives means that the undergraduate degree as posited by Shafie et al. (2014) will no more adequate for the sustainability of success required in the construction industry. The implication of this is that programmes aimed at improving the performance of employees, particularly employees with little or no industrial experience have to be put in place for maximum productivity and Schuler and Jackson (2014) identified mentoring as one of such programmes.

Mentoring, as opined by Kenneth and Lomas (2015), is an intellectual exchange between a more experienced fellow and a little or no experience fellow, with the mentor giving direction and feedback needed for the support, career and personal growth of the mentee. It is an on-the-job training technique which aid in the transference and retention of requisite knowledge within a profession or an organisation and is continuously being used for developmental purpose by organisations. According to Garvey (2012), mentoring has developed into a valuable tool for employee, career support and professional development. In addition, mentoring is perceived as an instrument with the ability to close the gap in skills that have resulted from globalisation and advancement in technology, while Tinaco-Giraldo, Sanchez and Garcia-Penalvo (2020) further posited that mentoring helps to reduce the failure rate.

Despite the need for this all-important concept in every industry for sustainability purposes, mentoring is yet to receive the attention it deserved from the Nigerian construction industry (Oke, Aigbavboa and Odia, 2016). Furthermore, the revelation that emanated from analysing the extent to which research relating to mentoring has been conducted in both Nigeria and Africa, in general, is nothing different from what the concept has suffered in the Nigerian construction industry. This study, therefore, is assessing the efforts the construction professional firms are putting to drive mentoring practices in their respective firms, in other words, the exhibited drivers of mentoring practices in these firms. This study was conducted in Abuja, the capital of Nigeria. Abuja was considered due to the several ongoing construction activities. The findings of this study therefore can be generalised for all Nigerian and other African countries' construction firms. The subsequent sections of this study comprise the review of relevant literature, the methodology and the study's findings. Conclusions were drawn from the findings and relevant recommendations were given at the end.

BRIEF LITERATURE REVIEW

Mentoring Concept Overview

To begin the discussion on the concept of mentoring, it is important to take a quick look at knowledge. Knowledge as defined by Davenport and Prusak (1998) is a "fluid mix of framed experiences, values, contextual information and expert insight that provides a framework for evaluating and incorporating new experiences and information. Kelp (2011) refers to it as an inquiry-stopper while Brandom (2010) described it as a tool that makes explicit what is implicit. It originates and is applied in the minds of knowers. In organisations, it often becomes embedded not only in documents or repositories but also in organisational routines, processes, practices and norms". Knowledge could be tacit or implicit. The tacit knowledge can be seen or shown while the implicit knowledge has to do with years of practical experience

and can only be demonstrated by an experienced fellow. The multidimensional nature of knowledge can largely be said to be the reason for the complexity of knowledge transfer otherwise known as mentoring.

The concept of mentoring dates back to the Greek myth of how Telemachus, Odysseus son, had to be put under the care of a close friend of his father, to oversee the personal, professional and social, development of Telemachus while his father was out fighting in the Trojan war. According to Salter (2014), mentoring is an interpersonal learning relationship where the participants involved give and receive encouragement, guidance, coaching and advice from each other. Clutterbuck (2014) defined it as "offline help from one person to another in making significant transitions in knowledge, work and thinking". The word "offline" means that the mentoring relationship is not based on hierarchy or the line-authority. However, Grotirian-Ryan (2015) opined that after the recognition of relevant studies in the 1980s, most notably the studies of Kram between 1983 and 1988 on career development and psychosocial function being the fundamental model of mentoring, the concept has consistently evolved. Little wonder it is still being used today as a tool for development in various spheres including education, organisations, entrepreneurship, public health and library sciences, amongst others.

Despite the widespread success of mentoring in several spheres, Nor and Egbu (2010) opined that the processes involved in the furtherance of mentoring mechanisms in organisations have been identified to be highly complex and this has resulted in the perceived phenomenon of hostility in knowledge sharing or transfer that has widely dominated organisational reality. Crisp (2016) and Tinaco-Giraldo, Sanchez and Garcia-Penalvo (2020) corroborated this by recognising the potential of mentoring and the challenges associated with the process.

Mentoring Forms

There are two forms of mentoring. There are formal mentoring and also informal mentoring. According to Klinge (2015), the organisation in question usually structures formal mentoring through a mentoring coordinator. This form of mentoring is put together with a set of predetermined objectives and goals to be achieved by both the mentor and the mentee. One of the advantages of this form of mentoring is the fact that protégés can be protected from mentors who might have personal problems or lack belief in the values of the organisation, as these mentors can be detected early enough and further prevented from transferring the negative energy to the mentees. In addition, Clutterbuck (2014) posited that formal mentoring is in supports of the social inclusion notion which involves directing the process of mentorship in order to promote diversity and equal opportunity.

Furthermore, Chen, Liao and Wen (2014) opine that with formal mentoring, the protégée can build a relationship that is based on friendship, trust and effective communication with the mentor which has the capacity to reduce their turnover intentions. Also, it impacts positively the organisational commitment, socialisation, personal learning and job satisfaction of a mentee. According to Chun, Sosik and Yun (2012), the benefit of formal mentoring is not limited to mentees, as mentors always have a rewarding experience with protégées, recognition as well as improved transformational leadership. Although Kenneth and Lomas (2015) do not see it in that light, as they argued that formal mentoring is not as effective as informal mentoring because of the compulsory prescriptions which can lead to a reduction in the self-determination and autonomy of the participants.

Informal mentoring on the other hand is the opposite of formal mentoring in how it is formed. In this form of mentoring, there is no pre-defined arrangement on how partners are paired. Clutterbuck (2014) opined that although there is no difference between the benefits of formal mentoring and informal mentoring, there seems to exist a better opportunity to build trust and friendship in an informal mentoring relationship which could lead to the attainment of set objectives. This was corroborated by Chun, Sosik and Yun (2012) as they submitted that because of the interpersonal affinity and similarity already existing between the mentor and mentee, the mentee's well-being becomes more affective. Cox's (2005) emphasis is on the similarities which he said is critical in the choice of a mentor or mentee as any difference in values and interests could jeopardise the relationship.

Ayodeji and Adebayo (2015) opined that informal mentoring is more prevalent and effective in Nigeria. This is because of the voluntary nature of informal mentoring which allows for mutual beneficial targets to be set and not prescribed. In this case, according to Bynum (2015), confident individuals can make themselves available to be mentors and mentees with the mentees free to make their choice on the kind of mentor that fits what they want.

Drivers of Mentoring in an Organisation

Institutional and administrative support for mentor programs and mentor relationships as opined by Campbell (2011) is a critical tool for driving mentoring relationships in organisations. When this driver is lacking in an organisation, the success of any mentoring relationship will be greatly hindered. While a mentoring relationship will benefit from the support of every participant involved and affected as it will make the relationship successful, Goldman (2011) and Clarke et al. (2012) posited that necessary for the success of mentoring practices in any organisation is a preparatory programme which identifies guidelines and standards that will prepare and assist mentors to understand what is expected of them.

Furthermore, Ayodeji and Adebayo (2015) opined that there are other drivers of mentoring relationships that contribute to the success of the mentoring practice in an organisation. One such driver is participation in an initial scheme by willing volunteers who desire to succeed and grow. There must be a willingness from both the mentor and the mentee for the task ahead as willingness from both parties leads to commitment to the relationship. Finkel et al. (2002) corroborated this by opining that a successful mentoring relationship is dependent on commitment.

Ayodeji and Adebayo (2015) posited that another driver of mentoring relationship success is that those involved in a mentoring relationship must own process. The participants must be ready to take up their respective roles either as a mentor or a mentee and be responsible for the relationship to end positively. Gibb (2012) opined that participant of mentoring programmes should view the programme as a function of the circumstances that warranted the need for it and must combine to make the scheme work.

Also, the need for the provision of a supportive learning environment that is well-prepared and flexible for every participant involved in a mentoring programme cannot be over-emphasised. McKimm, Jollie and Hatter (2007) posited that when there is an enabling framework and a favourable environmental condition, the success of the mentoring relationship in an organisation is guaranteed. Management must create a conducive atmosphere for mentoring relationships to thrive. This is because it will show their belief in the entire mentoring process.

Ayodeji and Adebayo (2015) noted that promoting the scheme as a valuable form of professional and personal development is an avenue to ensure mentoring relationship success in an organisation. Allen and Eby (2003) opined that mentoring is integral to the learning development of individuals, while Lankau and Scandura (2007) referred to mentoring as a relationship that seeks to improve not just the mentee but also the mentor. Therefore, all parties involved must view and promote mentoring as a medium through which they can achieve personal and career development.

The informal form of mentoring is most common in Nigeria than the formal form of mentoring and for this reason, there is the need for appropriate awareness, marketing and raising of the scheme to the entire organisation and potential participants (Ayodeji and Adebayo, 2015). This is because the success of a mentoring programme is dependent on the consciousness of the participants of the scheme.

Pryce, Kelly and Keller (2007) posited that some mentoring programs might not be as effective as they could be even when such schemes are directed at a particular youth population. But, Dubois et al. (2002) had earlier opined that the effectiveness of mentoring schemes is a function of scheme practices adopted. That is mentoring relationship success is directly proportional to the specific drivers engaged in the process. Hence, the need to fully adopt the above drivers of the mentoring relationship to reap the benefits that accompany the mentoring process.

RESEARCH METHODOLOGY

This study is to examine the exhibited drivers of mentoring practices in construction professional firms with quantity surveying (QS) firms in Nigeria as the case study. For this purpose, survey research was carried out and a quantitative approach through questionnaires was used for data gathering from respondents for sake of objectivity. The population for this study were the entire QS consultancy firms practising in Abuja, Nigeria. According to NIQS (2018), 80 QS firms are registered for practice in Abuja. Census sampling was the data collection technique used. This is because the number of QS consultancy firms practising in Abuja, Nigeria, falls within a manageable size. This means all the firms were sampled for the study. The research instrument used in the study was a structured questionnaire. Its design was informed by the information gathered from a review of relevant literature. The background information of the respondents was the focus of the preliminary section of the questionnaire as the questionnaire was designed in sections. Respondents were presented with the drivers of mentoring practices drawn from literature and were requested to indicate the degree of the exhibition of each of the drivers in their respective firms which was based on a 5-point Likert rating scale (Very High = 5, High = 4, Average = 3, Low = 2 and Little or None = 1). To avoid instances of non-delivery or misplacement in transit associated with posted questionnaires, the administration of the questionnaires was through personal delivery during the questionnaires. A total of 149 questionnaires were distributed to the firms in Abuja, one questionnaire for each rank or position in the respective firms. The number of usable questionnaires retrieved from the firms was 142 which signifies a 95.30% response rate.

In the analyses of the data gathered, the background information was analysed using percentage and frequency whereas mean item score (MIS) was

used in the ranking of the exhibited drivers of mentoring practices, one sample *t*-test was used to determine the relative importance of each of the identified driver and their significance level and then Factor Analyses was adopted to help group the drivers in terms of inherent effect.

FINDINGS

Background Information

The working experience distribution of the respondents is shown in Table 1. From the result of the analysis, (36.60%) of the respondents possess 1 year to 5 years of experience, (2.10%) possess 6 years to 10 years while (18.30%) possess between 11 years to 15 years of experience, respondents possess 16 years to 20 years of experience make up 9.20% of the distribution and 33.80% of the distribution which is 17 of the total number of respondents have over 20 years of experience. This shows that this study is cogent. The opinions sampled from the respondents cut across higher to lower experienced personnel.

Table 1. Average years of experience

Years of Experience	Frequency	%
1 year to 5 years	52	36.6
6 years to 10 years	3	2.1
11 years to 15 years	26	18.3
16 years to 20 years	13	9.2
21 years and above	48	33.8
Total	142	100

Knowledge Level and Mentoring Concept Adoption

The study examined the level of knowledge of the mentoring concept of respondents and a scale was fixed. A scale of 0% to 30% for "Very Low", 31% to 50% for "Low", 51% to 70% for "Average", 71% to 90% for "High" while 91% to 100% for "Very High". Results in Table 2 reveal that a good number of the respondents (64.8%) possess high knowledge of the mentoring concept, while for other respondents (35.2%), the knowledge level of the mentoring programme can be described as average. This shows that respondents are familiar with the mentoring concept, despite the concept of mentoring not receiving the needed attention from the Nigerian construction industry and Africa at large as discovered from the relevant literature reviewed.

Table 2. Level of knowledge of mentoring concept among respondents

Rating	Frequency	%
Very high	–	–
High	92	64.8
Average	50	35.2
Low	–	–
Very low	–	–
Total	142	100

Again, the respondents were presented with a scale to rate their perception of the adoption level of mentoring concept in their respective firms. a scale of between 0% to 30% was set for "Very Low", 31% to 50% for "Low", 51% to 70% for "Average", 71% to 90% for "High" while 91% to 100% for "Very High". Results in Table 3 reveal that 53.5% of the respondents are of believing that the level of adoption of mentoring concepts in their respective firms is average. 25.4% of the respondents believe the adoption is high, while 21.1% believe there is low adoption of mentoring concept in their respective firms. These findings reveal that mentoring concept has not received much attention in the respective firms though there is knowledge of it amongst the respondents.

Table 3. Perception level of adoption of mentoring concept in QS firms

Rating	Frequency	%
Very high	–	–
High	36	25.4
Average	76	53.5
Low	30	21.1
Very low	–	–
Total	142	100

Exhibited Drivers of Mentoring Practices

To assess the exhibited drivers of mentoring practices in construction-related firms, two statistical analyses were conducted. They include one sample *t*-test and factor analysis. The one-sample *t*-test was used to determine the relative importance of the exhibited drivers while factor analysis was used in determining which of the exhibited drivers could be measuring the same underlying effect.

One sample *t*-test

To determine the exhibited mentoring practices drivers in construction-related firms, mentoring practices drivers obtained from related literature were presented to the respondents to rank them based on their exhibition. A one-sample *t*-test was then performed to discover if the respondents regarded a particular driver to be exhibited or otherwise. The mean of each driver was ranked and tabulated to offer

a clear picture of the response of the respondents. Tables 4 to 6 show the summary of the test result. The mean for each identified driver together with the standard deviation and standard error is shown in Table 4. The null hypothesis for each driver was that it was unexhibited ($H_0: U = U_0$) and the alternative hypothesis was that the driver was exhibited ($H_a: U > U_0$), where U_0 is the population mean which was set at 3.5. In compliance with conventional risk level, 95% was set as the significance level and based on the 5-point Likert rating scale, a driver of mentoring practices was taken to be exhibited if it had a mean of 3.5 or more. In the scenario where two or more drivers have the same mean, the highest ranking of the exhibition was assigned to the mean with the lowest standard deviation (Field, 2005). In addition, the Shapiro-Wilk normality test was carried out to ascertain the nature of the data gathered.

Table 4. Result of the normality test

Drivers of Mentoring	Statistics	df	Sig.
Administrative and Institutional support	0.285	140	0.137
A preparatory programme that identifies standards and guidelines	0.664	140	0.578
Participation by willing volunteers	0.683	140	0.549
Participants' full commitment to the process	0.770	140	0.615
Appropriate awareness of the scheme to the whole organisation	0.692	140	0.512
Supportive learning environment	0.734	140	0.634
Promotion of the scheme as a valuable form of personal and professional development	0.697	140	0.541
Appointment of a coordinator to manage the programme	0.648	140	0.532
Linking the mentoring scheme with some other developmental efforts	0.349	140	0.218
Building in short stages say month by month and flexibility	0.268	140	0.135
Encouraging contracting with a "no fault" opt-out clause	0.192	140	0.089
Making all participants aware of potential risks and problems	0.816	140	0.748
Developmental diagnosis, i.e., auditing of mentee's needs and requirement	0.776	140	0.614
Shared expectations between mentor and mentee	0.545	140	0.464
Good communications structures between all players	0.645	140	0.550
Careful and appropriate selection and matching and pairing of partners	0.921	140	0.878
Continuous monitoring and evaluation of the scheme	0.614	140	0.560
Ensuring confidentiality in the administration of the programme	0.669	140	0.580
Establishing specific working arrangements	0.462	140	0.351
Devising a set of learning objectives	0.451	140	0.368
Setting a time limit in advance for the mentoring relationships	0.333	140	0.264

Table 5. Result of the *t*-test showing one sample statistic of exhibited mentoring drivers

Drivers of Mentoring	N	Mean	Std. Dev.	SEM
Administrative and Institutional support	142	3.965	0.971	0.081
A preparatory programme that identifies standards and guidelines	142	3.563	0.926	0.078
Participation by willing volunteers	142	3.683	0.588	0.049
Participants' full commitment to the process	142	4.070	0.659	0.055
Appropriate awareness of the scheme to the whole organisation	142	3.592	0.736	0.062
Supportive learning environment	142	4.134	0.869	0.073
Promotion of the scheme as a valuable form of personal and professional development	142	3.697	1.003	0.084
Appointment of a coordinator to manage the programme	142	3.148	0.743	0.062
Linking the mentoring scheme with some other developmental efforts	142	4.049	0.688	0.058
Building in short stages say month by month and flexibility	142	3.268	0.629	0.053
Encouraging contracting with a "no fault" opt-out clause	142	3.092	0.816	0.068
Making all participants aware of potential risks and problems	142	3.416	0.885	0.074
Developmental diagnosis, i.e., auditing of mentee's needs and requirement	142	3.176	0.765	0.064
Shared expectations between mentor and mentee	142	3.845	0.666	0.056
Good communications structures between all players	142	4.345	0.596	0.050
Careful and appropriate selection and matching and pairing of partners	142	3.289	0.847	0.071
Continuous monitoring and evaluation of the scheme	142	3.514	0.712	0.060
Ensuring confidentiality in the administration of the programme	142	3.169	0.953	0.080
Establishing specific working arrangements	142	3.042	0.898	0.075
Devising a set of learning objectives	142	3.831	0.790	0.066
Setting a time limit in advance for the mentoring relationships	142	3.683	0.766	0.064

Note: SEM = Standard error mean

Results in Table 4 show that the significant value of all the assessed exhibited drivers is above 0.05 which is a required criterion for normality, while results in Table 5 reveal that the standard error of the respective mean is close to zero relatively which implies that the sample chosen is an accurate reflection of the population. This is because Field (2005) opined that if there is a large standard error between the sampled mean and the population mean, then the population reflection is false. while a small standard error implies otherwise. In addition, the standard deviations obtained from the previous table show that they are all less than 1.0 which implies

there is little difference in the data and consistency in respondents' agreement (Field, 2005).

Nevertheless, it is important to note that the drivers "Promotion of the scheme as a valuable form of personal and professional development" which had a standard deviation of more than one (1.003) suggests that there might be differences in how the respondents interpreted how the drivers are exhibited in their respective firms which the following *t*-test can explain further.

Table 6. One sample test of exhibited mentoring drivers

Drivers of Mentoring Practices	Test Value = 3.5					
	<i>t</i>	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Administrative and Institutional support	5.707	141	–	0.465	0.304	0.626
A preparatory programme that identifies standards and guidelines	0.816	141	0.416	0.063	–0.090	0.217
Participation by willing volunteers	3.711	141	–	0.183	0.086	0.281
Participants' full commitment to the process	10.309	141	–	0.570	0.461	0.680
Appropriate awareness of the scheme to the whole organisation	1.483	141	0.140	0.092	–0.031	0.214
Supportive learning environment	8.692	141	–	0.634	0.490	0.778
Promotion of the scheme as a valuable form of personal and professional development	2.342	141	0.021	0.197	0.031	0.364
Appointment of a coordinator to manage the programme	–5.645	141	–	–0.352	–0.475	–0.229
Linking the mentoring scheme with some other developmental efforts	9.52	141	–	0.549	0.435	0.663
Building in short stages say month by month and flexibility	–4.401	141	–	–0.232	–0.337	–0.128
Encouraging contracting with a "no fault" opt-out clause	–5.967	141	–	–0.408	–0.544	–0.273

(Continued on next page)

Table 6. *Continued*

Drivers of Mentoring Practices	Test Value = 3.5					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Making all participants aware of potential risks and problems	-1.138	141	0.257	-0.085	-0.231	0.062
Developmental diagnosis, i.e., auditing of mentee's needs and requirement	-5.044	141	-	-0.324	-0.451	-0.197
Shared expectations between mentor and mentee	6.172	141	-	0.345	0.235	0.456
Good communications structures between all players	16.895	141	-	0.845	0.746	0.944
Careful and appropriate selection and matching and pairing of partners	-2.972	141	0.003	-0.211	-0.352	-0.071
Continuous monitoring and evaluation of the scheme	0.236	141	0.814	0.014	-0.104	0.132
Ensuring confidentiality in the administration of the programme	-4.141	141	-	-0.331	-0.489	-0.173
Establishing specific working arrangements	-6.073	141	-	-0.458	-0.607	-0.309
Devising a set of learning objectives	4.994	141	-	0.331	0.200	0.462
Setting a time limit in advance for the mentoring relationships	2.848	141	0.005	0.183	0.056	0.310

Table 5 shows the significance (*p*-value) of each driver. Although, the *p*-value is for a two-tailed test. We must note the interest of this study is a one-tailed test as shown per the test hypothesis ($U > U_0$). This resulted in the division of significant (sig.) values in Table 6 by two and the summary presented in Table 7.

Table 7. Summary of *t*-test showing rankings of exhibited mentoring drivers

Drivers of Mentoring	Mean	Std. Dev.	Ranking	Sig. (1-Tailed)
Good communications structures between all players	4.345	0.596	1	0.00025
Supportive learning environment	4.134	0.869	2	0.00025
Participants' full commitment to the process	4.070	0.659	3	0.00025
Linking the mentoring scheme with some other developmental efforts	4.049	0.688	4	0.00025
Administrative and Institutional support	3.965	0.971	5	0.00025
Shared expectations between mentor and mentee	3.845	0.666	6	0.00025
Devising a set of learning objectives	3.831	0.790	7	0.00025
Promotion of the scheme as a valuable form of personal and professional development	3.697	1.003	8	0.01100
Participation by willing volunteers	3.683	0.588	9	0.00025
Setting a time limit in advance for the mentoring relationships	3.683	0.766	10	0.00300
Appropriate awareness of the scheme to the whole organisation	3.592	0.736	11	0.07000
A preparatory programme that identifies standards and guidelines	3.563	0.926	12	0.20800
Continuous monitoring and evaluation of the scheme	3.514	0.712	13	0.40700
Making all participants aware of potential risks and problems	3.416	0.885	14	0.12900
Careful and appropriate selection and matching and pairing of partners	3.289	0.847	15	0.00200
Building in short stages say month by month and flexibility	3.268	0.629	16	0.00025
Developmental diagnosis, i.e., auditing of mentee's needs and requirement	3.176	0.765	17	0.00025
Ensuring confidentiality in the administration of the programme	3.169	0.953	18	0.00025
Appointment of a coordinator to manage the programme	3.148	0.743	19	0.00025
Encouraging contracting with a "no fault" opt-out clause	3.092	0.816	20	0.00025
Establishing specific working arrangements	3.042	0.898	21	0.00025

Factor analysis

To establish variables that could be measuring aspects of the same underlying dimension, factor analysis was performed. Before the principal component analysis was carried out, the data suitability was accessed and the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was deployed to ascertain if the data distribution is adequate for factor analysis.

The KMO measure of sampling adequacy results is shown in Table 8. It achieved a value of 0.613. Any value above 0.6 is considered acceptable, according to Eiselen, Uys and Potgieter (2007), the Bartlett test of sphericity suggests the population matrix was not an identity matrix. It, therefore, implies that the adequacy of the sample size was in favour of factor analysis to be deployed.

Table 8. KMO and Bartlett's test of mentoring drivers

Kaiser-Meyer-Olkin measure of sampling adequacy	0.613
Bartlett test of sphericity approx.	1,204.910
df	210.000
Sig.	0.000

Table 9 presents the average communality of the drivers after extraction and all values from the table are greater than 0.6. Hence, supporting the use of Factor analysis.

Table 9. Communalities for mentoring drivers exhibited

Mentoring Drivers	Initial	Extraction
Administrative and Institutional support	1.000	0.739
A preparatory programme that identifies standards and guidelines	1.000	0.611
Participation by willing volunteers	1.000	0.625
Participants' full commitment to the process	1.000	0.692
Appropriate awareness of the scheme to the whole organisation	1.000	0.656
Supportive learning environment	1.000	0.826
Promotion of the scheme as a valuable form of personal development	1.000	0.665
Appointment of a coordinator to manage the programme	1.000	0.756
Linking the mentoring scheme with some other developmental efforts	1.000	0.756
Building in short stages say month by month and flexibility	1.000	0.774
Encouraging contracting with a "no fault" opt-out clause	1.000	0.627
Making all participants aware of potential risks and problems	1.000	0.648
Developmental diagnosis, i.e., auditing of mentee's needs and requirement	1.000	0.766
Shared expectations between mentor and mentee	1.000	0.656

(Continued on next page)

Table 9. *Continued*

Mentoring Drivers	Initial	Extraction
Good communications structures between all players	1.000	0.556
Careful and appropriate selection and matching and pairing of partners	1.000	0.665
Continuous monitoring and evaluation of the scheme	1.000	0.687
Ensuring confidentiality in the administration of the programme	1.000	0.839
Establishing specific working arrangements	1.000	0.719
Devising a set of learning objectives	1.000	0.703
Setting a time limit in advance for the mentoring relationship	1.000	0.665

Note: Extraction method: Principal component analysis

Table 10 shows the correlation matrix which is the extent to which one driver is correlated to another. To show an efficient correlation for consideration, the values must be equal to or greater than 0.6. However, the researcher may decide to retain a factor with less than 0.6 because of its theoretical relevance (Eiselen, Uys and Potgieter, 2007). Although some of the drivers show little correlation with other drivers as can be noticed from the previous table, they were only retained because of their theoretical relevance. The coding in Table 10 is based on the serial numbers of mentoring drivers in Table 9.

Table 10. Exhibited drivers of the mentoring practices correlation matrix of factor analysis

Factors	Md1	Md2	Md3	Md4	Md5	Md6	Md7	Md8	Md9	Md10	Md11	Md12	Md13	Md14	Md15	Md16	Md17	Md18	Md19	Md20	Md21	
Md1	1.000																					
Md2	-0.025	1.000																				
Md3	.167	-0.061	1.000																			
Md4	-0.029	.353	-0.033	1.000																		
Md5	.089	.319	-0.039	.221	1.000																	
Md6	-0.289	.470	-0.375	.231	.086	1.000																
Md7	.062	.292	-0.152	.065	.071	.429	1.000															
Md8	-0.150	.064	-0.119	.138	.124	.123	-0.272	1.000														
Md9	.173	-0.133	.232	.071	-0.016	-0.308	-0.472	.402	1.000													
Md10	.062	-0.054	-0.153	-0.353	.023	-0.066	.062	-0.207	.035	1.000												
Md11	.470	.053	.046	.186	.240	-0.208	.086	-0.163	-0.122	.048	1.000											
Md12	-0.222	-0.123	.050	.180	-0.293	-0.017	-0.257	-0.234	-0.057	-0.074	-0.122	1.000										
Md13	.724	-0.071	.487	-0.011	-0.073	-0.324	.005	-0.121	.239	-0.025	.315	-0.109	1.000									
Md14	.342	.108	.345	.041	.073	-0.001	.046	-0.082	.110	-0.137	.222	-0.215	.443	1.000								
Md15	-0.126	.352	-0.232	.335	.340	.417	.366	.188	-0.111	.036	-0.051	-0.139	-0.150	.171	1.000							
Md16	-0.074	.343	.214	.459	.213	-0.034	.028	.078	-0.012	-0.252	.003	.028	.009	-0.033	.068	1.000						
Md17	.078	.225	.206	.119	.038	-0.032	-0.019	.016	.252	.166	.016	-0.082	.067	.304	.030	.128	1.000					
Md18	.589	-0.117	.274	.162	-0.002	-0.422	-0.235	.045	.345	-0.277	.418	-0.008	.650	.343	-0.128	.089	-0.045	1.000				
Md19	-0.015	.244	-0.324	.007	.112	.592	.321	-0.073	-0.233	.105	-0.073	-0.147	-0.145	.094	-0.304	-0.081	-0.090	-0.207	1.000			
Md20	.057	.063	-0.101	-0.086	-0.071	.064	.239	-0.114	-0.102	.020	-0.042	-0.081	-0.021	.098	.125	-0.245	.042	-0.207	.060	1.000		
Md21	-0.282	.054	.012	.297	.046	.085	-0.144	.407	.313	-0.014	-0.316	-0.108	-0.231	-0.180	.210	.131	.210	-0.276	-0.073	.005	1.000	

Table 11 reveals that seven components with eigenvalues greater than 1.0 were extracted. The total variance explained by each component extracted is as follows: Component 1 (18.262%), Component 2 (13.450), Component 3 (12.056), Component 4 (8.366), Component 5 (6.774), Component 6 (5.892) and Component 7 (4.880). Hence, the total cumulative variance for final statistics of the principal component analysis and the components extracted accounted for approximately 70%.

A close look at Figure 1 reveals a steep after the seventh driver. It differentiates the larger drivers from the drivers that have eigenvalues lesser than one. Varimax rotation was carried out to assist with the interpretation of the seven drivers and to resolve the issue of uncorrelated drivers. This generated a rotated matrix as shown in Table 12.

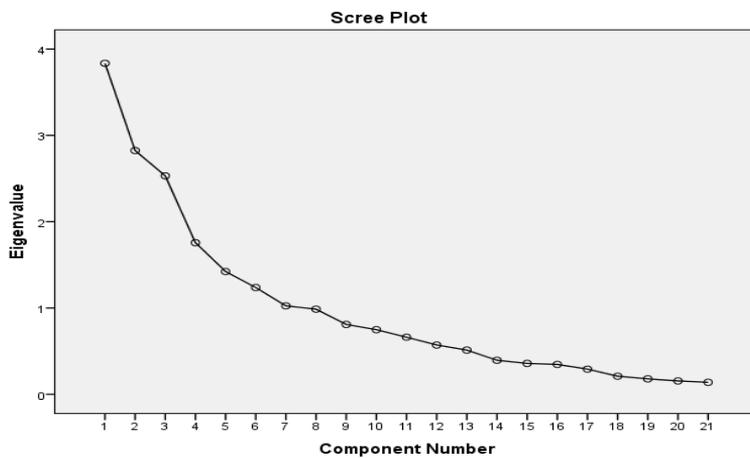


Figure 1. Scree plot for exhibited drivers of mentoring

Table 11. Total variance explained for exhibited mentoring drivers

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.835	18.262	18.262	3.835	18.262	18.262	3.209	15.280	15.280
2	2.824	13.450	31.711	2.824	13.450	31.711	2.622	12.488	27.768
3	2.532	12.056	43.768	2.532	12.056	43.768	2.182	10.390	38.158
4	1.757	8.366	52.134	1.757	8.366	52.134	2.104	10.018	48.176
5	1.423	6.774	58.908	1.423	6.774	58.908	1.651	7.863	56.039
6	1.237	5.892	64.800	1.237	5.892	64.800	1.549	7.377	63.416
7	1.025	4.880	69.680	1.025	4.880	69.680	1.315	6.264	69.680
8	0.987	4.698	74.379						
9	0.810	3.855	78.234						
10	0.749	3.569	81.803						
11	0.662	3.153	84.956						

(Continued on next page)

Table 11. *Continued*

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
12	0.571	2.720	87.675						
13	0.513	2.441	90.116						
14	0.395	1.879	91.995						
15	0.358	1.706	93.701						
16	0.347	1.652	95.353						
17	0.292	1.392	96.744						
18	0.210	1.000	97.744						
19	0.179	0.852	98.596						
20	0.156	0.741	99.337						
21	0.139	0.663	100.000						

Note: Extraction method: Principal component analysis

Table 12. Rotated component matrix for mentoring drivers

Mentoring Drivers	Components						
	1	2	3	4	5	6	7
Developmental diagnosis, i.e., auditing of mentee's needs and requirement	0.846	-0.165	-0.019	-0.035	-0.039	0.139	0.021
Ensuring confidentiality in the administration of the programme	0.808	-0.223	0.175	0.133	-0.005	-0.196	-0.220
Administrative and Institutional support	0.800	-0.079	-0.149	-0.100	0.247	0.016	-0.007
Shared expectations between mentor and mentee	0.666	0.210	0.060	0.032	-0.066	0.324	0.232
Encouraging contracting with a "no fault" opt-out clause	0.492	-0.144	0.137	-0.323	0.451	-0.177	-0.079
Establishing specific working	0.014	0.820	-0.162	-0.109	0.011	-0.054	-0.074
Good communications structures between all players	-0.071	0.580	0.236	0.148	0.299	0.052	0.212
A preparatory programme that identifies standards and guidelines	-0.037	0.478	0.443	-0.108	0.272	0.314	0.021

(Continued on next page)

Table 12. *Continued*

Mentoring Drivers	Components						
	1	2	3	4	5	6	7
Participants' full commitment to the process	0.040	0.191	0.790	0.129	0.077	0.020	-0.083
Careful and appropriate selection and matching and pairing of partners	-0.077	-0.106	0.722	-0.063	.152	.224	-0.221
Building in short stages say month by month and flexibility	-0.178	0.056	-0.652	-0.168	0.259	0.406	-0.232
Appointment of a coordinator to manage the programme	-0.086	0.087	0.129	0.817	0.167	-0.170	-0.017
Linking the mentoring scheme with some other developmental efforts	0.266	-0.217	-0.089	0.726	-0.056	0.251	-0.192
Setting a time limit in advance for the mentoring relationships	-0.388	-0.020	0.191	0.617	0.073	0.270	0.135
Promotion of the scheme as a valuable form of the personal and professional development process	-0.021	0.438	0.070	-0.477	0.229	0.038	0.431
Appropriate awareness of the scheme to the whole organisation	-0.003	0.117	0.228	0.027	0.757	0.044	-0.118
Making all participants aware of potential risks and problems	-0.173	-0.110	0.220	-0.226	-0.635	-0.051	-0.318
Continuous monitoring and evaluation of the scheme	0.072	0.001	0.051	0.115	0.054	0.814	0.028
Participation by willing volunteers	0.373	-0.430	0.221	-0.016	-0.220	0.447	0.060
Devising a set of learning objectives	-0.028	0.031	-0.133	-0.074	-0.013	0.024	0.823

Note: Extraction method: Principal component analysis; Rotation method: Varimax with Kaiser normalisation

DISCUSSION

The summary of the one-sample *t*-test carried out reveals that "Good communications structures between all players" is the most exhibited driver of mentoring practices in QS firms. Ayodeji and Adebayo (2015) opined that good communication between mentors and mentees is fundamental to the success of a mentoring relationship. This is because every relationship; mentoring relationship inclusive thrives on regular communication. When there is poor communication, no matter the intention or the goal of the relationship, failure is inevitable. Supportive

learning environment ranked second in the exhibited mentoring drivers in QS firms. This is good for all parties involved in a mentoring programme. According to Campbell (2011) and Goldman (2011), a beneficial and successful relationship is dependent on the support from all parties involved and affected by the mentoring relationship. A supportive learning environment can only be possible when the management of the respective firms is interested in the career and psychological growth of young professionals. This seems to be the case with QS firms considering the mean and rank of this mentoring driver.

Participants' full commitment to the process, Linking the mentoring scheme with some other developmental efforts and Administrative and Institutional support completes the top five ranked drivers in the exhibition whilst encouraging contracting with a 'no fault' opt-out clause, the appointment of a coordinator to manage the programme and establishing specific working arrangements emerged as the least ranked exhibited driver of mentoring practices in QS firms.

Following the discovery of the study, it is important to state that QS firms are committed to driving mentoring practices in their respective firms, which in turn will ensure the career and psychological development of protegees in the firms. This can be observed from the top-ranked exhibited drivers of mentoring practices and their means. Although, attention needs to be paid to the mentoring drivers such as appointing a coordinator for the programme and establishing a specific working environment, which ranked low in the exhibition.

Generally, the findings largely reveal the exhibited mentoring drivers in QS firms. It is good to see that QS firms strive to create an enabling environment for mentoring practices to thrive. This they do by providing a supportive learning environment and ensuring that all participants are committed to the mentoring process.

Furthermore, owing to the examination of the inherent relationships that exist between the variables under each component in the factor analysis conducted, Component 1 was termed "Developmental diagnosis", Component 2 was termed "Supportive learning environment", Component 3: "Participants full commitment", Component 4: "Coordinator's appointment", Component 5: "Participants awareness", Component 6: "Scheme monitoring and evaluation" and Component 7 was termed "Devising learning objectives". These names were derived from the components using the driver with the highest loading factor.

Component 1: Developmental Diagnosis

The five extracted items loaded onto Component 1 are "Developmental diagnosis", i.e., "Auditing of mentee's needs and requirements" (0.846), "Ensuring confidentiality in the administration of the programme" (0.808), "Administrative and Institutional support" (0.800), "Shared expectations between mentor and mentee" (0.666) and "Encouraging contracting with a 'no fault' opt-out clause" (0.492). It is important that before a mentoring programme is commenced, the needs and requirements of the participants are known. These will help shape the focus of the programme and aid in measuring the success of the mentoring scheme. The above-loaded factors in this component are essential during the initiation stage of the mentoring scheme in an organisation as the focus of the factors is the mentee. This is fundamental to the level of success of mentoring practices observed in QS firms as they give attention to auditing mentees' needs and requirements. This is because knowing and meeting these requirements can lead to commitment on

the part of the mentee. Commitment, as opined by Finkel et al. (2002), leads to a successful mentoring relationship.

Component 2: Supportive Learning Environment

The four extracted items loaded onto Component 2 are "Supportive learning environment" (0.853), "Establishing specific working development" (0.820), "Good communications structures between all players" (0.580) and "A preparatory programme that identifies standards and guidelines" (0.478). These drivers loaded to this component account for 13.45% of the variance. A fundamental way at ensuring the success of mentoring practices in an organisation as opined by McKimm, Jollie and Hatter (2007) is to create an enabling framework and conducive environmental conditions for the relationship to thrive. The loaded items of this component reveal that the importance of planning cannot be overemphasised in the success of mentoring relationships. QS firms emphasise creating an enabling environment as revealed by the study.

Component 3: Participants' Full Commitment

The three extracted items loaded onto Component 3 are "Participants' full commitment to the process" (0.790), "Careful and appropriate selection and matching and pairing of partners" (0.722) and "Building in short stages, say month by month and flexibility" (0.652). These drivers loaded to component three accounted for 12.056% of the variance. A successful mentoring relationship is depended on the commitment of parties to the relationship (McKimm, Jollie and Hatter, 2007). In the selection, matching and pairing of participants, an organisation needs to commit to a key requirement. QS firms in Nigeria understand the need for participants' commitment and this is helping the firms in achieving the objectives of mentoring schemes.

Component 4: Coordinator's Appointment

The four extracted items loaded onto Component 4 are "Appointment of a coordinator to manage the programme" (0.817), "Linking the mentoring scheme with some other developmental efforts" (0.726), "Setting a time limit in advance for the mentoring relationships" (0.617) and "Promotion of the scheme as a valuable form of the personal and professional development process" (0.477). The drivers loaded to Component 4 account for 8.366% of the variance. It is proper to appoint a coordinator that would oversee a mentoring programme as posited by Ayodeji and Adebayo (2015). This will help to ensure the participants are properly guided and play their expected roles for the success of a mentoring practice. Although QS firms do not practice this as revealed by the study, it should become a practice in not just QS firms but every organisation that aims at a successful mentoring relationship.

Component 5: Participants' Awareness

The two extracted items loaded onto Component 5 are "Appropriate awareness of the scheme to the whole organisation" (0.757) and "Making all participants

aware of potential risks and problems" (0.635). The drivers loaded to component five account for 6.774% of the variance. Ayodeji and Adebayo (2015) opined that proper awareness of the mentoring programme to all participants is important as it helps in raising the consciousness of everyone involved in the programme which will result in the successful implementation of the scheme. In addition, making all participants aware of potential risks and problems is as important as making them aware of the scheme. The need for proper programme awareness and risk involved in the scheme to all participants must be understood by QS firms in Nigeria as this will help to achieve the fundamental aim of the programme.

Component 6: Scheme Monitoring and Evaluation

The two extracted items loaded onto Component 6 are "Continuous monitoring and evaluation of the scheme" (0.814) and "Participation by willing volunteers" (0.447). These components account for 5.892% of the variance. Monitoring and evaluation of the mentoring programme is a vital tool for ensuring its success in organisations as lack of this could seriously see the programme failing to meet its objective which in turn will hinder its success. A beneficial and successful mentoring relationship is likewise dependent on the willingness of the parties involved and affected by the relationship. When there is the willingness of the parties involved, there will be commitment. This, according to Finkel et al. (2002), lead to a successful mentoring relationship.

Component 7: Devising Learning Objectives

The only extracted item loaded onto Component 7 was "Devising a set of learning objectives" (0.823). This component accounts for 4.880% of the variance. The study reveals that QS firms do exhibit this driver of mentoring practices. This driver is particularly important to the mentee as it will help improve the motivation of mentees when they know what they will achieve at the end of the programme.

CONCLUSIONS

Examining the exhibited drivers of mentoring practices in construction professional firms has become necessary. This is a result of how important these drivers are to the successful implementation of the mentoring scheme. Through the study carried out, the knowledge level of construction professionals on the concept of mentoring has been deduced. In addition, the adoption level of mentoring programmes in the respective firms was ascertained. This study has also been able to examine the exhibited drivers of mentoring practices in the surveyed firms as they are fundamental to the successful implementation of mentoring schemes in construction firms generally. This study can draw conclusions based on findings that mentoring concept is well known to construction professionals; although, the same cannot be said of its adoption in their respective firms. The level of adoption is still average at best. The findings can further conclude that construction professional firms in Nigeria have good communication structure for the parties involved in mentoring programmes, the firms also create an environment that supports mentoring, have participants that are fully committed to the mentoring

process, try to link mentoring scheme with other developmental schemes and offer administrative and institutional support. These ranked the most exhibited of the drivers of mentoring practices in QS firms. The right environment for mentoring to thrive has been created in QS firms by the adoption of these drivers of mentoring practices in the firms. However, the low ranking of appropriate awareness of the scheme to the whole organisation, continuous monitoring and evaluation of the scheme, careful and appropriate selection and matching and pairing of partners, the appointment of a coordinator to manage the programme and establishing specific working arrangements, can be said to be the reason behind the feeling of low adoption level of mentoring concept by the professionals in QS firms.

In addition, the exhibited drivers of mentoring practices have been classified into seven main clusters namely, "Developmental diagnosis", "Supportive learning environment", "Participants' full commitment", "Coordinator's appointment", "Participants' awareness", "Scheme monitoring and evaluation" and "Devising learning objectives".

There is a need for construction professional firms to give particular attention to the low-exhibited drivers of mentoring practices such as appropriate awareness of the scheme to the whole organisation, continuous monitoring and evaluation of the scheme, careful and appropriate selection and matching and pairing of partners, the appointment of a coordinator to manage the programme and establishing specific working arrangements. This will ensure the whole organisation are on the same page regarding what the firm is trying to achieve and the success of the programme. Furthermore, although this study was conducted in QS firms, studies on the adoption and exhibited drivers of mentoring practices can be a guide to other consultancy firms within the built environment where such studies are yet to be conducted.

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