

## **Challenges of Adopting Multiskilling Strategy to Quantity Surveying Practice in Nigeria.**

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**Abstract:** *The threat for survival in consultancy business and diminishing volume of construction jobs/work couple with the few numbers of Quantity Surveyors usually engaged on construction projects. It has become imperative that certain strategic measures and innovations are embarked upon by quantity surveying firms to keep abreast of developmental and professional changes. Therefore, this paper considered motivational factors for multiskilling and appraised the challenge of adopting multiskilling strategy by quantity surveying firms in Nigeria. The paper adopted questionnaire survey on two separate population of diversified quantity surveying firms and multiskilled Quantity Surveyors working within diversified quantity surveying firms identified by pilot survey using snowball sampling technique. The questionnaire was structured on the rubric of motivational factors for multiskilling and challenges to the adoption of multiskilling in Nigeria. A total of eighty questionnaires were administered from which sixty-six was retrieved. The data collected were analyzed using mean item score while the hypothesis was tested using chi-square cross-tabulation. The analyzed data indicated that competency; competitive advantage and customization are the strongest among motivational factors that encouraged a Quantity Surveyor to be multiskilled and quantity surveying firm to diversify while cost implication of engaging multiskilled personnel; job/task-based requirements and pride of professional association are prominent challenges to the adoption of multiskilling strategy in Nigeria. The paper concluded that the future challenges and opportunities facing the professional service firms could be hinged on cutting-edge services which are flexible, innovative and internationally focused. The paper recommended that quantity surveying firms being a Small Medium Enterprise (SME) should embrace multiskilling strategy as a means of sustaining the business.*

**Keywords:** *Challenges, multiskilling, multiskilling strategy, Nigeria, quantity surveying services,*

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### **I. Introduction**

The construction industry is unique in the way it manages and organises human resources. Unlike manufacturing or process industries, each construction project is different in terms of staffing, organisation, strategy and management. Hence, Yusuf, Charles and Paul (2012) noted that construction projects by their nature are fragmented, complicated, risky and uncertain. Consequently, every project presents its own challenges and requires a unique complement of people during various construction phases. This view was corroborated by earlier studies that from the initial pre-project engineering and planning by consultants, through estimating, to deploying various resources, all aspects of a construction project use a long standing, firmly entrenched structure that require upwards of twenty-five categories of personnel (Vokes and Brennan, 2013; Loosemore and Dainty, 2012; Madter, Bower and Aritua, 2012). These categories of personnel form what is commonly referred to as the project structure. This structure is so fundamental to construction that to contemplate altering any of its components is to challenge the core fabric of the industry - a fabric woven over many centuries. Recognition of how deeply embedded this structure is, prompted the UK Commission for Employment and Skills (UKCES, 2013) to state that implementing multiskilling strategies would require nothing less than a paradigm shift throughout the construction industry.

However, the declining productivity and industrial performance have prompted many researchers in the construction industry to seek ways to use scarce resources more efficiently and effectively (Wang, 2008 and Gurbuz, 2010). These studies on how to utilise construction resources have caused stakeholders to seek ways to optimize scarce resources in the face of global economic challenges. Hence, alternative utilisation strategies and modified industry practices are needed if the construction industry is to address declining performance effectively (Farnham and Hutchinson, 2011). Therefore, the need for the phenomenon called multiskilling.

Thomas (2010) defined multiskilling as utilisation strategy where personnel possess a range of skills appropriate for more than one work process and are used flexibly on a project or within an organisation. Thus,

personnel can be assigned to construction tasks based on their ability to perform the needed skill/task, not limited to traditional job boundaries.

Abrams and Berge (2010) noted the threat for survival in consultancy business and diminishing volume of construction jobs/work and more importantly, the few numbers of Quantity Surveyors usually engaged on construction projects. It has become imperative that certain strategic measures and innovations are embarked upon by quantity surveying firms to keep abreast of developmental and professional changes. Therefore, this paper appraises the challenges of adopting multiskilling strategy by quantity surveying firms in Nigeria.

## **II. Literature Review**

### **Quantity Surveying Professional Services**

Professional service firms are noted to play a key role in the knowledge economy by acting as sources of new knowledge for client and by mastering the intricate process of both producing and using knowledge (Qianet *al*, 2010). Yet, the reasons why certain professional service firms turn out to be more successful than others remain poorly understood. Traditionally, professional service firms have been defined as human capital-intensive activities. Indeed, the success of developing and delivering customized services to clients is directly linked with the skills of employees in the firm.

Oyediran (2011) emphasized the importance of Quantity Surveyors as members of the design and construction teams in both private and public sectors of a nation. Their pivotal roles in construction project development and delivery are well acknowledged by literature while Ajanlekoko (2012) described quantity surveying as the amalgamation of several other disciplines such as law, accountancy, business management, information management and construction technology within the unique context of the built environment. However, Phoya and Kikwasi (2008) noted that in the course of reviewing the development of quantity surveying that there has been a shift in the emphasis from cost to value with many quantity surveying firms expanding the horizons of services offered. Quantity surveyors are becoming increasingly involved in project management, value engineering, risk and facilities management, life cycle costing among other new innovations. Also, in the United Kingdom, some quantity surveying firms carry out insolvency and corporate restructuring, survey on hazardous materials and environmental audit. But in Nigeria; the growth rate from the traditional core competence areas to new directions is steady and slow. This view was corroborated by Ajanlekoko (2012) that quantity surveying practice is still in the mainstream areas in Nigeria.

Babalola (2009) considered the uniqueness of services offered by quantity surveying firms in the areas of financial probity in the execution of construction projects and noted that the major concern of the client is for the project to be completed to cost, quantity and schedule. However, it has been observed that it is not all executed projects that the clients are satisfied. This dissatisfaction brings to focus the quantity of services rendered by construction professionals. Phoya and Kikwasi (2008) corroborated that the demand for quantity, accountability and efficacy of professional services has highlighted the need for Quantity Surveyors to demonstrate that they are keeping abreast of new knowledge, techniques and developments related to their professions. Also, the proliferation of knowledge in the construction sector, combined with the impact of technology in the workplace, means that construction professionals must maintain the currency of their qualifications by learning about such advances and developments. This will enable the service firm to identify sources of quantity, discover quality problem and diversify to other possible course of services.

### **Contemporary Development in Multiskilling**

Morita (2005) noted the unattractive image of work in the construction industry that leads to high job turnover due to lack of opportunities for training and career growth. This view was corroborated by reports of Business Roundtable (BRT, 2013) that noted the difficulties in recruiting and retaining skilled workforce in construction industry. However, the experience in Nigeria is not on shortage of skilled workforce but irregular construction job/consultancy assignment that has resulted in graduates who have acquired construction skills being employed in banking industry and other fields outside their specialization. Hence, the inability to employ and retain construction professionals necessitates alternative utilization strategy to make effective use of existing professionals within the construction industry.

Also, Dada and Jagboro (2012) noted the seasonal nature of consultancy jobs and the need to respond to changes in professional environment due to pressure from within and allied construction professionals call for Quantity Surveyors to seek development in other areas than cost management. This was also corroborated by McClement (2012) that the need to globalized professional services warrants the exploration of new service market and optimizes resources. Hence, the need for multiskilling as a concept.

Meanwhile, several researchers have worked on multiskilling as a utilization strategy (Haas *et al*, 2001; Tan *et al*, 2001; Chan and Dainty, 2007). These authors summarized the benefits of multiskilling as follows:

- (i) Flexibility – workers who are able to perform a large number of tasks can fill in for workers, thereby increasing workforce flexibility.

- (ii) Communication – knowledge of various tasks can increase the understanding of other tasks and improve coordination.
- (iii) Positive effects on innovation – the processes of improving design concepts are easier because of individual multi knowledge.
- (iv) Employment security – a multiskilled workforce is not as threatened if skills become obsolete because of new technology.
- (v) Project efficiency – through the increased level of multiskilling, work can be reorganized so that it can be performed most efficiently.
- (vi) Competitive market – cost saving are passed onto customers, through decrease of cost due to reduction of turnaround time and number of workers involved.
- (vii) Management effectiveness – multiskilling is most valuable in the areas of management. It affect the reduction of production completion time (e.g. reduced subsequent production line delays); decrease project planning time (e.g. only one employee has to learn the details of the project); and cutback administration costs (e.g. faster completion of pay claims and materials billing)

Summarily, Forde and Mackenzie (2007) concluded that multiskilled workers would cooperate with management on cost saving and technical change to production process.

### **Multiskilling Strategy**

Every business organisation offers enormous opportunities to engage the hearts and minds of the people who make it work. Unlike physical resources, which depreciate when used, people tend to become more valuable with time and experience. Management's challenge is to harness employees' latent cognitive energy and transform it into a competitive weapon (Sawhney, 2013). The study linked organisational strategy to performance management that is based on labour flexibility strategies (multiskilling) of (i) Dual Skill strategy, (ii) Four Skill strategy, (iii) Four Skills-helpers strategy and (iv) Theoretical Maximum strategy. These categories of multiskilling strategy were summarised by Akinola (2016) as follows:

(i) Dual Skill Strategy: - The dual skill strategy was developed as an extension of the traditional wave theory of project scheduling. As a schedule is developed, the goal is to get the crews to come to the job, work continuously with maximum productivity until their work is complete and then move on to the next job. The demand-driven dual skill strategy extends the wave theory to identify craft combinations with complimentary workloads so that workers arrive on the project and remain longer by working on multiple tasks before demobilizing.

(ii) Four Skills Strategy: - This model minimizes the set of work classification required to execute a particular project from its inception to completion by classifying the work into four general groups. Burleson *et al* (1998) described this four skill grouping as; Civil/Structure group; Mechanical group; Electrical group and General Support group.

(iii) Four Skill-helpers Strategy: - This is a further modification of the four skill strategy. In this case, the general support group workers are classified into three skill levels: Novice/helper; Journeyman and Foreman. To construct the four skills-helpers craft groupings, the helper level skill category was removed from the originating craft classification and added to the general support group. All helper level workers, regardless of originating craft discipline, are included in the general support grouping. The theoretical basis for this strategy is twofold. First, a low skilled worker in any craft has very similar duties and is not solely responsible for any specific craft task. Therefore, these helpers could be used flexibly across the project without requiring significant additional training. Second, because new recruits will be assigned as a helper to many craft workers during their first year, they will have the opportunity to observe each craft. When these helpers are ready for more detailed skill training, they can make informed choices of craft discipline(s) based on personal experience.

(iv) Theoretical Maximum Strategy: - This multiskilling model assumes that the construction workers consist of just one work classification system. This implied that all construction workers are fully multiskilled and flexible. This implied that all construction workers in this approach are assumed to be fully multiskilled. However, the development of a fully multiskilled work force may not be economically efficient or desirable; but the theoretical maximum provides a relative measure of benefits achieved by each of the other multiskilling strategies.

### **Challenges to Multiskilling**

De-Varo and Martins (2010) presented two perspective of multiskilling in terms of productivity and flexibility. The study assesses the volatility on a firm's choice between multiskilling (one which gives greater flexibility to reassign workers in production line) and specialization (one which provides workers with the expertise in the area of specialty). In furtherance to this paper, other studies that have dwelt so much on the drawback of multiskilling are: Thannimalai *et al* (2013) highlighted eight challenges of multiskilling as: (i) cost of multiskilling (ii) task based skill requirements (iii) additional equipment requirements (iv) union laws (v)

safety measures (vi) learning-forgetting-relearning process (vii) inefficiency in operation because of displacement (viii) competency in comparison to specialized workers.

Adamuet *al* (2012) identify sixteen areas of barriers of multiskilling as: (i) Lack of adequate training (ii) Resistance to change (iii) Licensing requirement (iv) Limit on human skill retention (v) Pride of craft association (vi) High training cost (vii) Jurisdictional disputes between different crafts unions (viii) Unsuitable for complex tasks (ix) Difficulty in developing multiskilled craft tests (x) Difficulty in developing suitable compensation policies to match the level of skills acquired (xi) Difficulty in recruiting and accessing adequate information regarding the skills of workers (xii) The need to change organisational structure of company to accommodate multiskilling strategy (xiii) Difficulty in modifying already established single skilled labour management policies to accommodate multiskilling strategy (xiv) The need for change in project and company systems to support multiskilling as a competitive strategy (xv) Difficulty in assigning workers to appropriate tasks and organizing effective crews and; (xvi) Complexity of maintaining a multiskilled workforce

However, the categories of challenges highlighted by Abrams and Berge (2010) could be summarized as:

- (i) Cost versus return on investment: - The claim that a multiskilled workforce contributes to a business' productivity and agility may be more of an accepted claim than a proven one in some cases.
- (ii) Employers' concerns: - Employers may view the idea of multiskilling their employees with suspicion and concern.
- (iii) Employees' concerns: - Despite many opportunities for continued growth and learning made available through multiskilling training programs, this development might be viewed with suspicion and concern, by employees.
- (iv) Job descriptions and compensation: - Compensating a multiskilled workforce can be a matter of concern and confusion for both employers and employees. When employees are expected to perform multiple tasks, they may be working in areas that under traditional job descriptions are compensated differently.

### III. Research Methodology

The paper adopted questionnaire survey on two separate population of diversified quantity surveying firms and multiskilled Quantity Surveyors working within diversified quantity surveying firms. These were identified by pilot survey using snowball sampling technique. Heckathorn (2011) described snowball sampling as a technique for finding research subjects where one subject gives the researcher the name of another subject who in turn provides the name of a third, and so on. This process is based on the assumption that a 'bond' or 'link' exists between the initial sample and others in the same target population. The two separate data sets were census. The questionnaire was structured on the rubric of motivational factors for multiskilling and challenges to the development of multiskilling in Nigeria. A total of eighty questionnaires were administered from which sixty-six was retrieved. This represents a return rate of 82.5%, which is above the usual rate of 20-30% recommended for questionnaire survey in construction management studies by Fellow and Liu (2008). The data collected were analysed using mean item score while the hypothesis was tested using cross-tabulation. A cross-tabulation is a joint frequency distribution of cases based on two or more categorical variables. The categorical variables are the number of skill-set acquired by multiskilled Quantity Surveyors (either dual-skill or triple-skill). The joint frequency distribution was analysed with chi-square statistics to determine whether the variables are statistically independent or associated.

### IV. Data Presentation And Analysis

**Table 1:** Background of Respondents

Category	Classification	Mid-value(x)	Frequency (f)	(fx)
Years of experience	Below 5 years	3.00	0.00	0.00
	6 – 10	8.00	20.00	160.00
	11 – 15	13.00	20.00	260.00
	16 – 20	18.00	7.00	126.00
	21 – 25	23.00	7.00	161.00
	Above 25	28.00	12	336.00
	Total			66.00
		Mean = 15.80		
<b>Classification</b>	<b>Category</b>	<b>Frequency</b>	<b>Percentage</b>	<b>Cumulative</b>
Professional Cadre of Respondents (NIQS)	Members	62	93.90	93.90
	Fellow	4	6.10	100.00
	Total	66	100.00	
Highest Formal Qualification in Quantity Surveying	Bachelor Degree	3	4.55	4.55
	Post graduate	14	21.21	25.76
	Diploma Degree			
	Master Degree	46	69.69	95.45
	Doctoral Degree	3	4.55	100.0
Total		66	100.00	

Highest Formal	Bachelor Degree	9	13.64	13.64
Qualification in Allied	Postgraduate	43	65.15	78.79
Discipline/Field	Diploma Degree			
	Master Degree	9	13.64	92.43
	Doctoral Degree	5	7.57	100.0
	Total	66	100.00	

Table 1 show the mean year of experience of respondents on the job to be above fifteen years and indicated that 93.90% and 6.10% of the respondents have qualified as professional member and fellow of the institute respectively. This Table also indicated that 95.45% of the respondents have acquired training in the core discipline of quantity surveying while 86.36% have undergone postgraduate training in allied discipline of the built environment.

**Table 2: Motivational Factors Enhancing Multiskilling in Work/Business Environment**

S/N	Variables of Motivational Factors	Mean Score	Significance value (p)	Rank
1.	Possession of required skill knowledge to perform service (Competency)	4.33	0.000	1
2.	Competitive advantage	4.32	0.000	2
3.	Ability to adjust service to meet the unique needs of the customers (Customization)	4.06	0.483	3
4.	Ability to perform service dependably and accurately (Reliability)	3.97	0.000	4
5.	Economic factors (Increase in income generation)	3.95	0.000	5
6.	Interest relative to the profession	3.95	0.000	5
7.	Perceived market value for the profession	3.74	0.002	7
8.	Challenges in the work environment	3.71	0.011	8
9.	Ability to repetitively provide the same level of service to all customers (Consistency)	3.71	0.011	8
10.	Ability to react to unexpected problems encountered during service provision (Responsiveness)	3.58	0.000	10
11.	Technology / innovation required in the process of service provision	3.56	0.005	11
12.	Prestige	3.42	0.000	12
13.	Job security	3.33	0.000	13
14.	Ease of training	2.91	0.014	14

P < 0.5

The paper considered motivation as a psychological process useful for encouraging Quantity Surveyor to take more interest in the work assigned (being goal – oriented and action – oriented) that is necessary to divert human behaviour towards achievement of certain goals. Table 2 indicated the motivational factors that encouraged a quantity surveyor to be multiskilled and quantity surveying firm to diversify. Competency; competitive advantage and customization with the mean value of 4.33; 4.32 and 4.06 are ranked first; second and third respectively. This is in tandem with Nuranet al (2010) who noted that with the growing level of competition across industries, competence is increasingly viewed as crucial for business to maintain long-term competitive advantage. Also of note is that all the variables of motivation are significantly related to making Quantity Surveyor become multiskilled except customization with a p-value of 0.483. This indicated that there is a strong motivational factors of multiskilling and service diversification.

Hypothesis was formulated on the basis of motivational factors enhancing multiskilling and stated as:

H<sub>0</sub>1: There is no significant association between motivation and multiskilling by Quantity Surveyors in Nigeria.

H<sub>a</sub>1: There is significant association between motivation and multiskilling by Quantity Surveyors in Nigeria.

This hypothesis was tested using cross-tabulation. A cross-tabulation is a joint frequency distribution of cases based on two or more categorical variables. The joint frequency distribution was analysed with the chi-square statistics to determine whether the variables are statistically independent or associated as shown in Table 3.

**Table 3:** Cross-tabulation of Motivational Factors Enhancing Multiskilling

S/N	motivational factors	Professional Institutes											
		NIOB	NIA	NSE	NICarb	NIEV	NITP	NIPM	NIFM	NBA	IC AN	NI of Auditors	OTHERS (outside construction industry)
		Chi-square Sig value	Chi-square Sig value	Chi-square Sig value	Chi-square Sig value	Chi-square Sig value	Chi-square Sig value	Chi-square Sig value	Chi-square Sig value	Chi-square Sig value	Chi-square Sig value	Chi-square Sig value	Chi-square Sig value
(i)	Economic factors (increase in income generation)	0.154	a	0.003*	0.007*	0.582	0.240	0.114	0.240	0.162	a	0.240	0.255
(ii)	Job security	0.206	a	0.118	0.112	0.150	0.000*	0.035*	0.371	0.022*	a	0.000*	0.431
(iii)	Challenges in the work environment	0.032*	a	0.730	0.262	0.000*	0.124	0.000*	0.079	0.328	a	0.124	0.000*
(iv)	Prestige	0.016*	a	0.882	0.096	0.534	0.000*	0.003*	0.405	0.002*	a	0.000*	0.262
(v)	Competitive advantage	0.173	a	0.812	0.080	0.142	0.099	0.801	0.398	0.036*	a	0.099	0.755
(vi)	Interest relative to the profession	0.004*	a	0.403	0.088	0.399	0.029*	0.186	0.315	0.186	a	0.029	0.186
(vii)	Perceived market value for the profession	0.463	a	0.645		0.828	0.081	0.594	0.081	0.264	a	0.081	0.097
(viii)	Ease of training	0.026*	a	0.118	0.183	0.006*	0.100	0.390	0.100	0.002*	a	0.100	0.006*
(ix)	Ability to perform service dependably and accurately (reliability)	0.716	a	0.711	0.098	0.123	0.065	0.352	0.085	0.000*	a	0.065	0.233

**Table 3:** Cross-tabulation of Motivational Factors (Cont'd)

S/N	motivational factors	Professional Institutes											
		NIOB	NIA	NSE	NICarb	NIEV	NITP	NIPM	NIFM	NBA	IC AN	NI of Auditors	OTHERS (outside construction industry)
		Chi-square Sig value	Chi-square Sig value	Chi-square Sig value	Chi-square Sig value	Chi-square Sig value	Chi-square Sig value	Chi-square Sig value	Chi-square Sig value	Chi-square Sig value	Chi-square Sig value	Chi-square Sig value	Chi-square Sig value
(x)	Ability to react to unexpected problems encountered during service provision (responsiveness)	0.762	a	0.348	0.004*	0.049*	0.371	0.001*	0.012*	0.031*	a	0.371	0.519
(xi)	Possession of required skill knowledge to perform service (competencies)	0.071	a	0.826	0.010*	0.123	0.426	0.123	0.426	0.000*	a	0.426	0.778
(xii)	Ability to adjust service to meet the unique needs of the customers (customisation)	0.629	a	0.362	0.000*	0.247	0.089	0.746	0.043*	0.003*	a	0.089	0.441
(xiii)	Ability to repetitively provide the same level of service to all customers (consistency)	0.296	a	0.594	0.000*	0.332	0.118	0.332	0.014*	0.000*	a	0.118	0.575
(xiv)	Technology/innovation required in the process of service provision	0.379	a	0.327	0.069	0.015*	0.051	0.543	0.051	0.192	a	0.051	0.248

P < 0.5

Table 3 indicated motivational factors that are significantly associated to Quantity Surveyors being multiskilled (those asterisk); thereby rejecting the null hypothesis and accepting the alternate hypothesis where asterisk is applicable. However, this Table also indicated that none of the factors motivated Quantity Surveyors to become multiskilled as an architect or accountant. Therefore Table 4 was deduced from Table 3 as the significant motivating factors for Quantity Surveyors to become multiskilled in allied profession of the built environment as:

**Table 4: Significant Motivating Factors**

S / N	Allied Profession	Significant Motivating Factors
1.	Registered builders	Challenges in the work environment; prestige; interest relative to the profession and ease of training.
2.	Registered engineers	Economic factors.
3.	Arbitrators	Economic factors; responsiveness; competency; customization and consistency.
4.	Estate valuers	Challenges in the work environment; ease of training; responsiveness and technological innovations.
5.	Town planners	Job security; prestige and interest relative to the profession.
6.	Project managers	Job security; challenges in the work environment; prestige and responsiveness.
7.	Facility managers	Responsiveness; customization and consistency.
8.	Lawyers	Job security; prestige; competitive advantage; ease of training; reliability; responsiveness; competency; customization and consistency.
9.	Auditors	Job security and prestige.
10.	Other profession outside the built environment	Challenges in the work environment and ease of training.

### Challenges of Multiskilling

Table 5 indicated the challenges to the adoption of multiskilling among quantity surveying firms in Nigeria. This Table indicated that cost implication of engaging multiskilled personnel; job/task-based requirements and pride of professional association with mean value of 3.88; 3.48 and 3.39 respectively are prominent while limitation on human retention capacity and difficulty in recruiting process with mean value of 2.32 and 2.06 respectively are least among the factors inhibiting multiskilling. However, the Table also revealed that complexity of maintaining a multiskilled workforce; lack of training facilities; competencies in comparison to specialized worker; employer's concern of multiskilled worker becoming co-competitors and inefficiency in operation due to displacement or switching over task with p-value of 0.180; 0.297; 0.702; 0.057 and 0.208 respectively are not significantly inhibiting multiskilling development among Quantity Surveyors in Nigeria. This finding was in tandem with Adamuet *al* (2012) who identified the multiskilling barriers in North-Western Nigeria.

**Table 5: Challenges of Multiskilling**

S/N	Challenges	Mean Score	Significance value (p)	Rank
1.	Cost implication	3.88	0.000	1
2.	Job/task-based requirements	3.48	0.000	2
3.	Pride of craft/profession association	3.39	0.035	3
4.	Complexity of maintaining a multiskilled workforce	3.26	0.180	4
5.	Lack of training facilities	3.23	0.297	5
6.	Competencies in comparison to specialised worker	3.03	0.702	6
7.	Resistance to changes	3.00	0.012	7
8.	Union law	2.91	0.000	8
9.	Difficulty to change organisational structure to accommodate multiskilling strategy	2.86	0.012	9
10.	Employer's concern of multiskilled worker becoming co-competitor	2.79	0.057	10
11.	Safety & health measures	2.79	0.000	10
12.	Difficulty to enlist support of workers and stakeholders	2.73	0.000	12
13.	Difficulty of compensation policy	2.59	0.014	13
14.	Unsuitable for complex task	2.50	0.037	14
15.	Inefficiency in operation due to displacements or switching over task	2.42	0.208	15
16.	Learning-forgetting-relearning process/curve	2.38	0.000	16
17.	Limitation on human learning/retention capacity	2.32	0.001	17
18.	Difficulty in recruiting process	2.06	0.000	18

## V. Discussion of Findings

The analyzed data indicated that competency; competitive advantage and customization are the strongest among motivational factors that encouraged a Quantity Surveyor to be multiskilled and quantity surveying firm to diversify while ease of training and job security are the least. However, the least ranked factor of motivation is well above the average of the mean item score. Also of note is that all the variables of motivation are significantly related to making Quantity Surveyor become multiskilled except customization. Also, the analyzed data indicated that cost implication of engaging multiskilled personnel; job/task-based requirements and pride of professional association are prominent challenges to multiskilling while limitation on human retention capacity and difficulty in recruiting process are least among the factors inhibiting the adoption of multiskilling strategy. However, the results revealed that complexity of maintaining a multiskilled workforce; lack of training facilities; competencies in comparison to specialized worker; employer's concern of multiskilled worker becoming co-competitors and inefficiency in operation due to displacement or switching over task are not significantly inhibiting multiskilling development among quantity surveyors in Nigeria. This finding was in tandem with Adamu *et al* (2012) who identified the multiskilling barriers in North-Western Nigeria.

## VI. Conclusion And Recommendations

The future challenges and opportunities facing the professional service firms have been hinged on cutting-edge services which is flexible, innovative and internationally focused. Quantity surveying service firms in Nigeria had to cope with irregular business thereby necessitating service diversification and multiskilling. The paper had considered the motivational factors enhancing multiskilling and identified cost implication of engaging multiskilled personnel; job/task requirements and pride of professional association as the major challenges to the adoption of multiskilling strategy among quantity surveying firms in Nigeria. The paper recommended that quantity surveying firms being a Small Medium Enterprise (SME) should embrace multiskilling strategy as a means of sustaining the business.

## References

- [1]. Abrams, C. & Berge, Z. (2010). Workforce Cross-training: A Re-emerging Trend in Tough Times, *Journal of Workplace Learning*, **22** (8), 522 – 529.
- [2]. Adamu, N., Nensok, M. H. & Aka, A. (2012). Multi-skilling Barriers in the Construction Industry in North-Western Nigeria In: Laryea, S., Agyepong, S.A., Leiringer, R. and Hughes, W. (Eds) *Procs 4<sup>th</sup> West Africa Built Environment Research (WABER) Conference*, 24-26 July 2012, Abuja, Nigeria, 67- 82.
- [3]. Ajanlekoko, J.O. (2012). From Thermometer to Thermostat: The Challenging Role for the Quantity Surveyors in the 21st Century, *The Quantity Surveyor*: **1** (1), 40-41.
- [4]. Akinola, J. A. (2016). *Appraisal of Service Delivery of Multiskilled Quantity Surveyors in Nigeria*, A Ph. D Thesis Submitted to School of Postgraduate Studies, Federal University of Technology, Akure, Nigeria.
- [5]. Babalola, O. (2009). A Study of the Core Competencies of Quantity Surveyors in Managing Electrical and Engineering Services Sub-contract, *Journal of Environmental Design and Management*, **2** (1), 55-64.
- [6]. Business Roundtable Reports (2013). Create, Grow & Sustain: How Companies Are Doing Well by Doing Good, Available at <http://www.businessroundtable.org>. Accessed on 21<sup>st</sup> May, 2014.
- [7]. Burleson, R. C., Haas, C. T. & Turker, R. L. (1998). Multiskilled Labour Utilization Strategies in Construction, *Journal of Construction Engineering and Management*, **124** (6), 480-9.
- [8]. Chan, P. W. & Dainty, A. R. J. (2007). Resolving the UK Construction Skill Crisis: A Critical Perspective on the Research and Policy Agenda. *Journal of Construction Management and Economics*, **25**, 375-386.
- [9]. Dada, J. O. & Jagboro, G. O. (2012). Core Skills Requirement and Competencies Expected of Quantity Surveyors: Perspectives from Quantity Surveyors, Allied Professionals and Clients in Nigeria, *Australasian Journal of Construction Economics and Building*, **12** (4), 78 – 90.
- [10]. Devaro, J. & Farnham, D. (2011). Two Perspective on Multiskilling and Product Market Volatility, *Labour Economics*, **18**, 862–867, Available at [http://www.eale.nl/conference2010/programme/paperpostersessions%20II/add127668\\_ks4m8uap.pdf](http://www.eale.nl/conference2010/programme/paperpostersessions%20II/add127668_ks4m8uap.pdf), Accessed on 14<sup>th</sup> of April, 2011.
- [11]. Farnham, M. & Hutchinson, E. (2011). The Effects of Multiskilling on Labour Productivity, Product Quality and Financial Performance, *Advances in the Economic Analysis of Participatory and Labour-Managed Firms*, **12**, 35 – 62.
- [12]. Fellow, R. & Liu, A. (2008). *Research Methods for Construction*, (3rd Edition), United Kingdom, Blackwell Publishing.
- [13]. Forde, C. & MacKenzie, R. (2007). Getting the Mix Right? The Use of Labour Contract Alternatives in UK Construction. *Personnel review*, **36** (4), 549 – 563.
- [14]. Gurbuz, E. (2010). *A Genetic Algorithm for Bi-objective Multi-skilled Project Scheduling Problem with Hierarchical Levels of Skills*, M. Sc Thesis Submitted to the Graduate School of Natural & Applied Sciences, Middle-East Technical University.
- [15]. Haas, C.T., Rodriguez, A.M., Glover, R. & Goodrum, P. M. (2001). Implementing a Multiskilled Workforce, *Journal of Construction Management and Economic*, **19**, 633-641.
- [16]. Heckathorn, D. D. (2011). Comments: Snowball Versus Respondent-driven Sampling, *Sociological Methodology*, **41** (1), 355 – 366.
- [17]. Loosemore, M. & Dainty, A. (2012). *Human Resource Management in Construction: Critical Perspective*, Second Edition, London, Routledge.
- [18]. Madter, N., Bower, D. A. & Aritua, B. (2012). Projects and Personalities: A Framework for Individualizing Project Management Career Development in the Construction Industry, *International Journal of Project Management*, **30** (1), 273 – 281.
- [19]. Morita, H. (2005). Multiskilling, Delegation and Continuous Process Improvement: A Comparative Analysis of US-Japanese Work Organisations, *Economica*, **72**, 69-93.



- [20]. Nuran, A., Destan, K., Petra, C. W. & Micheal, S. (2010). Exploring the Impact of Technological Competence Development on Speed and NPD Program Performance, *Journal of Production Innovation Management*, **27** (6), 915 – 929.
- [21]. Oyediran, S. O. (2011). *Challenges to Efficient Service Delivery by Quantity Surveyors*, A Paper Presented at the 2011 Quantity Surveying Assembly and Colloquium held at Shehu Musa Yar' Adua Centre, Abuja, Nigeria on 28<sup>th</sup>-29<sup>th</sup> September, 2011.
- [22]. Phoya, S. & Kikwasi, G. (2008). *Continuing Professional Development (CPD) for Quality Services in the Tanzanian Construction Sector*, A Paper Delivered at the Third Built Environment Conference, Bellville, South Africa.
- [23]. Qian, C. L.; Andrea, M.; Bruce, S. T. & Karl, W. (2010), *Diversification and human capital as antecedents of internationalization among professional service firms: A study of UK based engineering consultants*, A paper presented at Danish research unit for industrial dynamics, DRUID working paper, Available at [www.druid.dk](http://www.druid.dk).
- [24]. Sawhney, R. (2013). Implementing Labour Flexibility: A Missing Link Between Acquired Labour Flexibility and Plant Performance, *Journal of Operations Management*, **31** (3), 98 – 108.
- [25]. Tan, C.M., Tong, T. K. L., Cheung, S. O. & Chan, A. P. C. (2001). Genetic Algorithm Model in Optimizing the Use of Labour, *Journal of construction Management and Economics*, **19**, 207- 215.
- [26]. Thannimalai, P., Kadhum, M. M., Feng, C. J. & Ramadass, S. (2013). A Glimpse of Cross Training Models and Workforce Scheduling Optimization, *IEEE Symposium on Computer & Informatics*, 98 – 103.
- [27]. Thomas, P. (2010). Multi-skilling and Organisational Teams, Available at [http://www.EzineArticle.com/?expert=Thomas P.](http://www.EzineArticle.com/?expert=Thomas+P)
- [28]. UK Commission for Employment and Skills (UKCES, 2013). *Technology and Skills in the Construction Industry*, Evidence Report 74, September.
- [29]. Vokes, C. & Brennan, J. (2013). *Technology and Skills in the Construction Industry*, UK Commission for Employment and Skills, Evidence Report 74, September.
- [30]. Wang, Y. (2008). *A Quantitative Analysis of Training Outcomes and Strategies in the Construction Industry*, Ph. D Thesis Submitted to College of Engineering, University of Kentucky, Lexington.
- [31]. Yusuf, A., Charles, E. & Pual, C. (2012). Building Information Modeling (BIM) Implementation and Remote Construction Projects: Issues, Challenges and Critiques, *Journal of Information Technology in Construction (ITcon)*, **17** (5), 75 – 92.

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