

TREND IN INFLUENCES ON CAREER CHOICE IN QUANTITY SURVEYING AND ITS IMPLICATIONS

Samuel Ekung^{*1} & Ejike Okonkwo²

¹School of Built Environment, University of Salford, M5 4WT, Greater Manchester, UK

²Department of Quantity Surveying, University of Uyo, Uyo, Nigeria

ABSTRACT

This study examined trend in determinants of career choice in quantity surveying between 1960 till date. Views from 335 respondents collected via structured questionnaire were analysed using descriptive/inferential statistics. The study reveals in the 60s, personal interest drives choice of career in quantity surveying. The trend however diminishes significantly in the 20th century. As a result, there is little progression from the undergraduate to post graduate studies in the profession. This is unhealthy for the future of the profession. The study provides an understanding of the critical threat to the sustainability of the profession and brings to bare exciting theoretical insights.

Keywords: built environment, influences, interest, quantity surveying and trend.

INTRODUCTION

From the days of Willis' [41] till date, when predictions of future changes in the practice of quantity surveying (QS) profession began, several changes have shaped the profession as a body of knowledge. Most times, change drivers are predicated to redirect completely the profession and some even threaten to exterminate it. The profession may not have escaped unscathed in these experiences but it often emerges stronger with evolved roles and opportunities [11]. According to [14], changes are everywhere; the possibilities of worst scenario are futuristic. Development in information technology (IT) remains the leading driver of change in the profession. Disaster risks, economic meltdown, sustainability issues, and evolution of new type of clients and project organisations are also significant factors ([11]; [35]). The revolution in IT in respect of Building Information Modelling (BIM) has generated so much debate in practice and the academia. There is a prediction of possible extermination of quantification and other traditional roles of the quantity surveyor [32]. Like other new technologies, this view is perceptual because till date, BIM significantly depends on traditional cost estimating practice due to the lack of compatible cost data [20].

The emerging challenges appear surmountable, but the critical yet erroneously ignored issues are the interest and passion drivers in the profession. It was Jack Welsh who noted, '*If the rate of change on the outside exceeds the rate of change on the inside, the end is near*'. Threats imposed by ICT are not effective without human capital to propel it. The sustainability of the profession is about the future and must be rooted in education, training and investment in human capital. This must significantly be built around the beginners and not limited to the established professionals in the field. Genuine interest and passion are critical to the future of the profession. Contextually, how young entrants contact the profession is deemed to impact on the interest and passion of the students. [3] had found that young graduates are abandoning the surveying profession and prospective students lack self-motivation to enrol in the profession.

In order to explore mechanism for improving interest and passion among the young entrants into the profession, needs subsist to examine what drives people interest in the profession in the past and now. This objective and its realisation will benefit QS education in a number of ways. First, it will facilitate the need to redesign policy and programmes that will propel and sustain genuine interest and passion in young entrant. Second, it retains the tendency to promote sustainable institutional hegemony in the profession. Third, it will provide a yardstick for assessing the suitability of curricula in the profession in view of making them more attractive.

Quantity Surveying

Quantity surveying is concerned with cost and financial management of construction projects. Its expertise enhance the design process through logical use of cost parameter to sustain viable links relating price, utility and forms which assists in attaining the employer's objectives within the predetermined budget [23]. The responsibility of the Quantity Surveyor include cost assessment, evaluation of economic and contractual arrangement of the project which is often significantly prejudiced by factors in the environment, and changes that are exclusive to individual project [37]. Experience over the years underpinned the significance growth in practices and procedures of the quantity surveying since establishment [26], many decades ago. Basically, the expertise of the quantity surveying profession is anchored on key knowledge including: construction technology, quantification convention, construction economies, financial management, business administration and construction law [1].

Theories and Application of Trend Studies in the Construction Industry

Today's society depends heavily on the ability to predict the future in order to plan and optimised its potential benefits. There may be obstacles due to the inability to predict the future but progress can be built on past experiences and emerging trends to learning needs notably in the developing countries. Scientific approaches abound for predicting the future. [9] twelve methods novel research attempts in this area. A study by [6] found five of the methods very useful in the context of the construction industry: scanning; scenario planning; trend analysis; extrapolation from expert interviews/pooling; and brainstorming. Scanning depends on published information and is an on-going attempt to recognize significant trend in the practice overboard the parties carrying out the scanning [9]. Scenario planning reinforces [14] position that greater impactful changes are yet futuristic. Fig 1 is the 'Plausible Cone' for predicting the future in respect of the past and present. The increasing diameter of the cone explicitly indicates the expanding uncertainty surrounding the prediction of the future. The implication of the cone however is that, imminent improbability is not only a case with the prediction of the future but also in understanding today and the past [40]

Trend analysis and extrapolation considerably remains the focal objective of the present study. It relies significantly on the ability to study specific changes in the environment either to determine the rate of change or predict the direction of change. However, while this study focuses on the direction of change, the accuracy of this method tend to decrease as the timeframe into the future increases [6]. Another approach is the expert interview/pooling which collects data via interview from experts within the profession. Experiential knowledge plays a significant role in this approach. It is however not uncommon, to find remarks such as 'in my 20years of quantity surveying practice, the profession has been predicted to extinct yet it get stronger with new opportunities'. Relevant data and or useful extrapolations can be made from these sources. A contrast technique from the previous one is brainstorming. It involves group deliberation rather than extrapolation from individual sources. Harmonize approach from these context was adopted by the study.

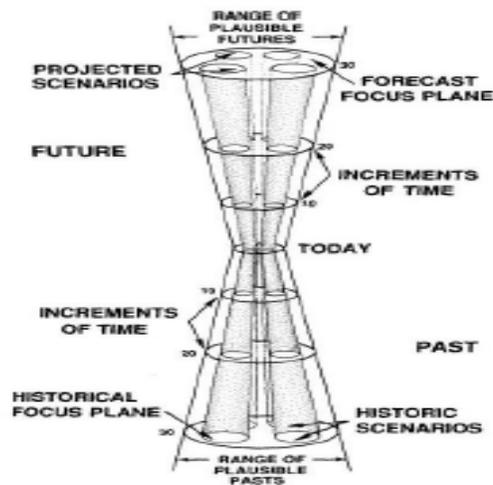


Figure 1: 'Plausible Cone for Predicting the Future' [40]

Career Choice Influences

Career choice can be describe as the process of selecting a career based on estimation of the candidate's capability, values, and skills prerequisite to generating success in a given profession [6]. It involves preparation and development of mental image by an individual in matching personal strength and weakness to the requirements of selected profession [4].A conceptual model of career development comprised of four phases: awareness; exploration; orientation; preparation; and continuous advancement education [27]. While the first four stages can be influence from elementary through secondary school, the fifth dimension is limited to individual aspiration and interest. The importance of personal interest in the subject and future usefulness is identified in [39]'s study.

Two theories are prominent in the study of career choice: sociological and deterministic school of thoughts [34]. The former asserts human beings are free agent in the market place with freedom to choose while the later enthused human beings are regulated by societal influences. From these theories, two perspectives are derived namely: choice based on personal enthusiasm and influences imposed by people above a subject. Selecting an occupation or career is therefore subject to a range of factors. Job preference is at the centre of career choice influences in all works of life. [25] decried skills shortage in construction and allied profession due to preference to 'service-oriented and information based jobs'. Family or parental influence is another popularly opinionated research finding in career studies.

Family of origin influence on career choice is widely acknowledged in the literature [16; 4 and 6]. [25] found that family members' employment in construction related industry influences both the decision to study and interest in pursuing a career in construction. According to [6], this influence impact also the decision-making process and the career an individual chooses. The potency in the snarls increases in a collectivist culture. In this culture, respect for and obedience to one's parents is significantly prioritised, and the attitudes of family members are therefore a strong determinant of career choice [4]. The criticality of family influence is anchored on it pivotal role as the most important agent of socialization [13]. Other factors are highlighted in Table 1. 30% of the study sample in [13] chooses career in the built environment due to reasons different from prospects in the profession and personal interest. 30% in the referenced study also expressed outright apathy to their chosen career. [13] sample consists of students in the real estate. Lack of role model has been identified as a disincentive to career choice in construction [22] among other factors. [12]

defined role modelling as someone in the society a student is admiring, trying to be like and someone who inspire them. Family tradition and peers influence were the least factors in [8]. Work experience or hand on the type of job prevalent among post graduate students in this study was also significant in [17].

Table 1: Influencers of Career Choice in the Construction Industry

Authors	Career Influencer
Gambo, Osagie & Ogungbemi (2012)	Desired course/personal interest
	Parental influence
	Peer influence
	Previous work experience
	Early school counselling
	Change of admission by institution
Fried & MacCleave, (2009)	Potential job placement at completion
	Status and prestige
	Media coverage
Koch, Greeman & Newton (2009)	Interest in construction
	Hands-on-type work activity
	Career placement
	Family business

From the foregoing review, career choice is broadly considered in the literature. Although these studies tend to focus on engineering, business and education, very few are dedicated to the specializations in the Built Environment and quantity surveying. The multiple perspectives in which the subject is studied across different industries endorse the importance of the research subject. But however, previous studies ignore trend study generally and therefore suggest the need to consider trend in influences of career choice in the different professions. The focus of this paper is to analyse the trend in factors influencing career choice in three decades of quantity surveying. Using this trend, the study attempt a perceptual evaluation of its impacts on the level of interest exhibited by quantity surveyors in practice and quantity surveying students at undergraduate and post graduate schools in Nigeria and the UK.

Research Methodology

Trend studies depend significantly on the approaches discussed in the previous literature section. However, the strategies are often translated into practical implementation using questionnaire survey, interview, workshops and observation. These methods are increasingly being used e.g. the Construction Industry Institute (CII) - strategic planning committee [5; 24]. The present study adopts questionnaire survey personally administered and using an online survey. Sampling by snowballing was adopted based on the need to sample only respondents in the quantity surveying discipline. Snowballing involves selecting samples based on network [19]. In this approach, few individuals in selected organisations were contacted first and information obtained from them. They were afterwards asked to identify useful persons in their network who later became respondents.

Quantity surveying students at under graduate and post graduate level at the University of Salford, UK and Imo State University, Nigeria, practising Quantity Surveyors (Qs) in Manchester and Owerri, Nigeria were snowballed. Survey in Nigeria consists of members in three social media groups: QS Lounge, QS- World Wide Network and Built Environment Researchers Group (BERG). 335 respondents were contacted and administered with survey instruments but 135 questionnaires were received and analysed. This is equivalent to 44% response rate. This is

above acceptable threshold in construction research. Inferential statistics, t-test and ANOVA were employed to analysis variation in the trend.

In designing the questionnaire, careful analysis was given to the factors affecting the accuracy of survey research design. With and inert objective to reach as much respondents as possible, identifying the respondents through snowballing was not without hitches, but sufficient time was allowed for the development of the networks. Common problems with questionnaire survey are in the design and administration. To overcome these barriers, common-sense wording to reflect normal conversation level; sending questionnaire with individually addressed letters which explained the purpose of the study with a promise for feedback and series of follow-up reminders was carried-out.

The questionnaire was designed to collect data mainly on factors influencing career choice within the QS profession. The study focused the generation of quantitative data only. To achieve this aim, respondents were only asked to identify factors, which influenced their decision to study the profession at the entrant level. With this approach, discrete identities are counted and objective perception evaluated thereby eliminating the subjective perspective that floods most construction management research. By the subjective approach, the construct of the research theme is generic, respondents are often required to rate their perception based on certain identified numerical scales. The data collected in this cannot be used with inferentially and the tendency to probabilistic statistics is minimal. Consequently, in order to enhance participation, the questionnaire contained only a single question, which enlists influences on career choice in tabular form. other component of the tabular question was segmentation of the three decades in review. This was to enable respondents picked their era thereby eliminating excessive data coding and processing.

Results

From Table 2, career choice among the undergraduates is driven by family influence – ‘parental influence and family business factor’; impact of role model and early school counselling and interest in construction is low. Among the post graduate students, parental influencediminishes while interest in construction increases. The critical drivers among post graduate students are hand on type work and job potential in the profession. The population of student at the post graduate level notably MSc and very few PhD are people from allied fields. Among the practising Quantity Surveyors, personal interest leads other factors parental influence also remains critical. Since parental influence cannot be separated from the choice of career in quantity surveying, there is need to promote self-motivation in students. According to [40], judging from parent’s experience, the probability of career advancement is minimal for a person in family influenced career. Although early career development can play a significant role in the life long professional capability, it can further determine future career progression and overall success [21].

Levene’s test of homogeneity (Table 3) indicates variance in score in 1980 to 2000, and there is no variance in 2000 till date, (sig = .05 and .74; valid at >.05). While there is no significant difference among the population score (sig. = .421 and .543; valid at <.05), the study however indicates a high F-value, which translates into asignificant variation in influencers of career choice in quantity surveying in the decades studied. Two tailed t-test also revealed a significant difference between Qs trained in 1960 to 1980 and others (sig. =.003 and .003; valid <.05). The trend tends to decrease from critical personal motivation and role model factors towards more of parental influence and family business sustainability objectives. The implication is declining genuine interest among young quantity surveyors in training across different continents.

Discussions

Psychological, organisational, cultural, and economic factors influence the choice of career and success in the chosen profession [18]. Studies by [33] and [31] in the Nigerian context found that first decade QSs exhibit more expertise in costing, monitoring and control and were respected for their pragmatism by allied professions than presently experience. Does the changing level of interest generate needs for transition in the younger quantity surveyors? Apparently yes! [2] found that today's QSs desire to expand the frontier of the quantity surveying practice. However, [31] argued that, such extended frontiers are yet rooted in the core competence of the profession. [26] also recognizes the difference between 20th and 21st century graduates and those of past decades and advocated the need to understand and manage the changing orientation of the younger generation in order to sustain a practice. [3] also discussed changes in the attitude of new graduates in the Surveying profession in Nigeria. Obsolete curriculum is pinpointed as a leading factor contributing to the decline in passion by prospective and graduate surveyors.

Table 2: Respondent's Influences on Career Choice in Quantity Surveying

Influences	Under graduat es	Post Graduat e	Practici ng QS	Trend in Decades		
				1960-80	'81-2000	'01 to date
Personal motivation	-	4%	46%	40%	18%	7%
Parental Influence	22%	4%	33%	9%	12%	29%
Peer influence	-	4%	-	0	9%	4%
Early School counselling	4%	0	-	9%	4%	9%
Act of God	18%	0	-	-	4%	18%
Potential job placement	13%	22%	-	13%	4%	7%
Media coverage	-	0	-	-	4%	-
Interest in construction	4%	11%	13%	4%	11%	7%
Hands-on type work activity	-	24%	-	-	-	7%
Status and prestige	-	9%	-	7%	4%	2%
Role model and mentor	4%	11%	8%	11%	11%	4%
Family business	27%	9%	-	4%	2%	7%
Total Population	42	45	48	45	45	45

Table 3: Test Statistics Summary

Correlation		T-test		Homogeneity Test		ANOVA	
r	sig.	p-value	Sig(2-tailed)	Levene Statistics	Sig	F-value	Sig
.482	.113	.003	.889	15.000	.050	1.167	.421
.14	.964	.003	.925	4.131	.740	.885	.543

Surviving today and future market is dependent on the commitment made now. The imminent in the industry is to build competence around practising professional. Competencies, like the profession is never stagnant but rather changes over time. Over reliance on building competencies for the future around practising quantity surveyor although necessary does not underpin sustainability. Danger looms where future QS lack the passion to rejuvenate his competencies in the future to suit emerging frontiers. The bulk of professionals in the academia today for instance were trained in 70s and 80s. Interest and passion for the profession must therefore drive the campaign for programme and policies aimed at sustaining the quantity surveying profession. Emphasis must be placed on stimulating genuine career interest at the entrant level into the profession against the widely acknowledged parental influence in the last two decades. Parameters

within religious organisations such as religious bulletins must be explored and utilised and career counselling in primary and colleges also intensified. The potency in this materials is based on the sacredness with which information receive from these places are treated.

Post graduate curricula must be redesigned to address career development needs of the progressive young quantity surveyors from undergraduate studies rather than focus on people seeking career in QS from allied professions. While there are very few progressions in the UK to MSc and PhD, students from QS background at MSc level often finds the core QS modules unattractive as it merely summarises the knowledge gained during the undergraduate level. The existing trend predisposes the few knowledge seekers at that level to diversifying mainly into management. The chances are that, in the next two decade, when the few genuine interest holder are gone, there will be little or no genuine interest holders in practice besides the very few in the academia.

Factors such as globalisation, communication and leadership, and technology adoption are the suggested knowledge areas where the future of the profession can be built on. It is important, as emphasised in Jack Welsh's quote, the change must be driven from within to the outside. BIM revolution portends imminent danger due to the fear of possible hijacking by people outside the enclaves of the profession because it is not driven by Quantity Surveying professionals and not extensively by those in the industry. In-house expertise and revolution must be targeted within the profession through research. Research in the profession must outstep descriptive model testing inquiry to model building and software development. Steps must also be taken to address the gap between graduates and their integration into practice. Formal restructuring of the graduate internship programme is necessary in this regard. [10] advocated strong conceptual skill-base to build on, in which practice and the academia must provide. [36] also advocated stronger linkages between the academia and practice. The profession have also being tipped to emerge as leader in the construction industry [30]; impetus is however placed at the door step of today's leaders in the profession. They must drive and build impetuses towards exploiting and stimulating genuine interest at the entrance level.

Conclusion

Based on the perceived declining interest among young quantity surveyors in training and the need to stir genuine interest that will sustain the profession in an ever changing market, the study examined trend in influences of career choice in quantity surveying in Nigeria and the UK between 1960 till date. Determinants of career choice were elicited using structured questionnaire and trend's variation analysed using inferential statistics. Self-motivation and role model drives career choice in the 60s and diminishes significantly to reliance on family and parental influence in other decades. The implication is declining genuine interest among young quantity surveyors in training across different continents. Refinements for genuine interest stimulation were also recommended. The message is clear and young quantity surveyors must change or like the Dinosaur be condemned to the anal of history.

References

- [1] Ashworth, A. & Hogg, K. (2007). Willis's Practice and Procedure for the Quantity Surveyor, 12th Ed., Oxford: Blackwell Publishing
- [2] Awodele, O. A., Akosile, T., Ogunsemi, D. R., & Owoeye, O. A. (2007). Competencies of Professional Quantity Surveyors in Nigeria. In Wang, Y., Sun, M & Shen, Q. (Ed.), Proceedings of 2007 international conference on Construction Real Estate Management. United Kingdom: China Architecture & building press, 270- 277
- [3] Balogun, A.; Matori, N. Hanaruzaman, Y. Lawal, D. & Chandio, I. (2012). Surveying Profession in Nigeria: Stimulating Interest and Encouraging Youth Participation for Future Sustainability, First

- FIG Young Surveyors Conference, Knowing to create the Future, Rome, Italy, and 4-5th May 2012
- [4] Beauregard, T. A. (2007). Family Influences on the Career Life Cycle, In M. Ozbilgin & A. Malach-Pines (Eds.), *Career Choice in Management and Entrepreneurship: A Research Companion* (pp. 101-126). Edward Elgar Press.
 - [5] Becker, T.C.; Jaselkis, E.J.; and McDermott, C.P (2011). Implications of Construction Industry Trends on the Educational Requirements of Future Construction Professionals, 47th ASC Annual International Conference Proceedings
 - [6] Brown, D. (2002). The Role of Work and Cultural Values in Occupational Choice, Satisfaction, and Success: A Theoretical Statement, *Journal of Counselling and Development*, 80: 48-56
 - [7] Chileshe, N. & Haupt, T.C. (2009). An Empirical Analysis of factors Impacting Career Decisions in South Africa Construction Industry, *Journal of Engineering, Design and Technology*, 8(2):221-239
 - [8] Chong, B.L.; Lee, W.P.; & Lim, C.C. (2012). The Roles of Graduate Quantity Surveyors in the Malaysian Construction Industry, 2012 International Conference on Management and Education Innovation
 - [9] Cornish, E. (2004). *Futuring: The Exploration of the Future*, Maryland: SAGE
 - [10] Davis, R.; Savage, M.; Susan, M., & Miller, E.(2009). Professional Education in Built Environment and Design: Exploring Stakeholder Roles and Responsibilities. In 16th World Conference on Cooperative Education and Work Integrated Learning, 23 - 26 June, 2009, Vancouver, Canada.
 - [11] Emmanuel, R. (2011). *Sustainability Assessment & Quantity Surveying Practice in Cartlidge, D., New Aspect of Quantity Surveying*, 3rd Edition, London: Routledge Spon Press
 - [12] Fried, T. & MacCleave, A. (2009). Influence of Role Models and Mentors on Female Graduates Students' Choice of Science as a Career, *The Alberta Educational Research*, 55(4): 482-496
 - [13] Gambo, Y.L.; Osagie, J.U. & Ogungbemi, A.O. (2012). Students' Perception of Career Choice Estate Management: a Study of Abubakar Tafawa Balewa University Bauchi, Nigeria, *Global Journal of Management and Business Research*, XII(1): 66-72
 - [14] Harun, H. Abdullah, J. (2008). Drivers of Changes: New Challenges for the Quantity Surveying Profession, available @ <http://fabserver.utm.my/download/ConferenceSemiar/ICCI2006S4PP09.pdf> retrieved 11/1/13
 - [15] Idowu, F. O and Odusami, K. T. (2006). An Evaluation of the Competencies of the Nigerian Professional Quantity Surveyors, *The Quantity Surveyor, Journal of the Nigerian Institute of Quantity Surveyors*, 56, 21-29
 - [16] Kisi, K.P.; Shields, D.R.; Shresstha. P.P. (2011). Factors Influencing High School Students to Pursue a Construction Baccalaureate, 47th ASC Annual International Conference Proceedings
 - [17] Koch, C.J.; Greeman, J. & Newton, K. (2009). Factors that Influence Students' Choice of Careers in Construction Management, *International Journal of Construction Education and Research*, 5:4: 293-307
 - [18] Kuh, G.D.; Kinze, J. Hayek, J.C. & Buckley B.K. (2006). What Matters to Students Success: A Review of the Literature, Commissioned Report for the National Symposium on Postsecondary Student Success: Spearheading a Dialog on Student Success, National Post-Secondary Education Cooperative
 - [19] Kumar, R. (2011). *Research Methodology, a Step-by-Step Guide for Beginners*, London: SAGE
 - [20] Lee, A. & Wu, S. (2012). From 3D to nD, BIM Lecture Series, University of Salford, UK
 - [21] Lee, C. & Hogg, K. (2010). Early Career Development of Quantity Surveying Professionals, available online at <http://nrl.northumbria.ac.uk/2341/> retrieved 2/3/14
 - [22] Madikizela, K and Haupt, T (2010). Influences on Women's Choices of Careers in Construction: a South African Study, *Australasian Journal of Construction Economics and Building*, 10 (1/2):1-15
 - [23] Maarouf, R. & Habib, R. (2011). *Quantity Surveying Role in Construction Projects – a Comparison of Roles in Sweden and the UK*, Malmo University: Anders Peterson
 - [24] McDermott, Cory P. (2009). *The Future of the Construction Industry and the Implications for Construction Project Management and Education*, A thesis submitted to the Department of Civil, Construction and Environmental Engineering, Iowa State University, Ames, Iowa.
 - [25] Millward, L.; Houston, D.; Brown, D.; & Barrett, M. (2010). Young people's Job Perceptions and Preferences, available @ kar.kent.ac.uk/4394/ retrieved 04/3/14

- [26] Moore, J.D. (2011). *Entering Construction Professionals: Survey of Work Values and Career Expectations*, Thesis submitted to the Department of Construction Management, Colorado State University.
- [26] Nkado, R.N. (2000). *Competencies of Professional Quantity Surveyors in a Developing Economy*. Proceeding of the 2nd International Conference on Construction, accessed November 19th 2012
- [27] Nneka, E. (2013). *Career Choice: a Basic Issue in Primary and Secondary School Level*, Arabian Journal of Business and Management Review (Nigerian Chapter), 1(2): 18 -28
- [28] Ozbilgin, M. Kiishii, F.; & Erdogmus, N. (2005). *Explaining Influences on Career Choice: the case of MBA Students in Comparative Perspective*, International Journal of Human Resource Management, 16(11)
- [29] Odeyinka, H. A. (2006). *The Role of the Quantity Surveyor in Value Management*, Paper presented at the 22nd Biennial conference/general meeting on Quantity surveying in the 21st Century – Agenda for the Future. Nigerian Institute of Quantity Surveyors
- [30] Ofori, G. & Rehman, S. (2012). *Role of Leadership in Transforming the Profession of Quantity Surveying*, The Australasian Journal of Construction Economics and Building, (9)1: 37 - 44
- [31] Oke, A.E.; Timothy, I.O.; and Olaniyi, A.I. (2010). *Perception of Construction Professionals to the Performance of Nigerian Quantity Surveyors*, Journal of Building Performance, 1(1): 64-72
- [32] Olatunji, O.A.; Sher, W. & Gu, N. (2009). *Building Information Modelling and Quantity Surveying Practice*, Emirate Journal for Engineering Research, 15: 57-70
- [33] Olusoga, J. R. (2006). *Key note address of a 2-day national seminar on Ethical issues and the Challenges in Construction Professionals' Service Delivery*, Nigerian Institute of Quantity Surveyors, Ondo state chapter.
- [34] Pafili, E. and Mylonakis, J. (2011). *Occupation Structure and Career Choice Vs Education*, available online at www.ccsenet.org/journal/index.php/ies/article/view/12876, retrieved 3/4/14
- [35] Ruddock, Les and Ruddock, Steven (2010). *Emerging from the Global Economic Crisis: Delivering Recovery through a Sustainable Construction Industry*, A report for CIB W55 Building Economics in Conjunction with Salford Centre for Research and Innovation and Built Environment Shaping Tomorrow, CIB Publication No. 333. Conseil International du Bâtiment, The Netherlands
- [36] Savage, S.; Davis, R. & Miller, E. (2009). *Exploring Graduate Transition from University to the Workplace: Employer, Academic and Graduate Perspectives*, In: 34th AUBEA Annual Conference: Managing change -challenges in education and construction for the 21st century, 7-10 July, 2009, Barossa Valley, South Australia.
- [37] Senaratne, S. & Sabesan, S. (2008). *Managing Knowledge as Quantity Surveyors: an Exploratory Case Study in Sri Lanka*, Built Environment-Sri Lanka 8(2): 41-7
- [38] Smith, P. (2010). *Quantity Surveying Practice in Australia and the Asia-Pacific Region*, FIG Congress 2010 Facing the Challenges – Building the Capacity Sydney, Australia, 11-16 April 2010, 1-15
- [39] Sturges, J., & Guest, D. (2004). *Working to Live or Living to Work? Work/life Balance Early in the Career*. Human Resource Management Journal, 14(4): 5-20
- [40] Taylor, Charles W. (1993). *Alternative World Scenarios for a New Order of Nations*, Strategic Studies Institute, U.S. Army War College, Carlisle Barracks, PA.
- [41] Willis, A.J. & Willis, C.J. (1979). *Willis's Practice and Procedure for the Quantity Surveyor*, 1st Ed., Oxford: Blackwell Publishing