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1. An Evaluation of Housing Conditions and Livability in Lagos, Nigeria: A Study of Festac Town Housing Estate (Phase 1) 1
Abayomi .O. Ibiyemi
Olumide A. Adenuga

2. Evaluating Fear of Crime Using the Structural Equation Model 25
Siti Rasidah Md Sakip
Aldrin Abdullah
Noraini Johari
Mohd Najib Mohd Salleh

3. Expected Success Factors in the Procurement of Public Sector Projects in Nigeria: A Stakeholder Analysis 41
Martin Olorunjobi Dada

4. Innovation Crisis in Design Studios: Whom to Blame? 61
Bhzad Sidawi

5. Construction Performance Guarantee: Performance Bond 85
Awang Ihsan bin Awang Yunus
Khairul Anuar bin Maarof

An Evaluation of Housing Conditions and Livability in Lagos, Nigeria: A Study of Festac Town Housing Estate (Phase 1)

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ABSTRACT

Festac Town Housing Estate (Phase 1) was conceived and executed in the 70's as a masterpiece in terms of providing mass housing, livable environment and complementary infrastructure facilities. This qualitative study uses purposive and stratified sampling. Research instruments of interview, and a questionnaire schedule was administered to a sample population of 210 Festac residents to investigate the condition of houses, condition and adequacy of estate physical infrastructure facilities, the residents' level of utility satisfaction with the social infrastructure, and affordability. The study, using descriptive analysis, and Chi-square Goodness of Fit test, shows that the condition of buildings and internal building amenities are generally good, except their water taps and laundry. Estate physical infrastructure facilities are in deplorable condition. The residents are satisfied with security, health centres and clinics, schools, police and fire services, post office, markets, places of worship, open spaces and playgrounds, banking services, shopping centres, petrol filling stations, workshops, waste and sewage collection/disposal. However, they are dissatisfied with hospital, library and entertainment facilities. Rents for vacant accommodation, land use charge rates, and public transportation are generally affordable, except water rate. The rental and capital values in the Estate are comparatively higher than those of similar neighbouring estates, such as Mile 2 Jakande and Satellite Town. The work concludes

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that the Estate is significantly able to meet the needs and aspirations of its residents.

Keywords: *Livability, Festac Town, Housing Conditions, Estate Infrastructure, Social Services*

INTRODUCTION

Lagos Metropolitan Area witnessed an unprecedented high rate of infrastructure and facilities provision when trade and commerce flourished with the introduction of export cash products in the late 1940s. The economic system of the country was modernized with the construction of road and railway networks, Apapa sea and Ikeja airports, which enhanced the accessibility of Lagos from other parts of the country. Lagos remained the major town for receiving and discharging both imported and exported goods. During this period, there was concentration of infrastructure and social amenities in Lagos. But the most worrisome situation was the selective planning system introduced by the colonial administration. Instead of a comprehensive planning of Lagos metropolitan area, it was only the colonial places of abode and work such as Government Residential Areas (GRA) at Apapa, Ikoyi, Ilupeju and Ikeja that were properly plan. The plights of the indigenous urban residents were left unresolved.

Long-term uncoordinated urban based developments of colonial government were inherited by the indigenous governments immediately after independence. Lagos, during this period, especially between 1962 and 1968 witnessed an unprecedented high rural-urban migration of people from the rural and less privileged regions (Onibokun, 1973). Similarly, the oil boom era of 1970s favoured urban concentration of industrial and social facilities in the South West Area, Lagos, then became one of the twenty emerging industrial centres, and that also made it a beneficiary of Nigeria's post-civil war rehabilitation programmes.

Rapid urbanization, poverty, corruption, and bad governance that pervaded the Nigerian space impacted on environmental quality, quantitative and qualitative residential housing. The housing shortage in Lagos is estimated at 65000 units per annum, while the overall housing shortage in Nigeria is estimated at 17 million units. The resultant acute shortage of livable housing accommodation necessitated the development of Festac Town in 1977.

STUDY AIM AND OBJECTIVES

The aim of the study is to elicit the livability of Phase 1, Festac Town Housing Estate using the condition of buildings, internal building amenities, estate psycho-social infrastructure, and residents' affordability as measuring parameters. The objectives are as follows:

1. To determine whether the physical conditions of housing and conditions of building amenities provide utility satisfaction to the residents of Festac Town.
2. To determine whether physical estate infrastructure facilities are in satisfactory conditions.
3. To determine the adequacy of physical estate infrastructure facilities in the estate.
4. To determine level of the residents' satisfaction with the social infrastructure facilities in the estate.
5. To investigate the affordability of house rental and other selected bills payable by the residents.

The significance of this research is to provide empirical information on housing conditions and infrastructure facilities in Festac Town to Federal, State, and Local Government policy makers with a view to improving the quality of life of the residents.

Research Questions

1. Are houses and internal building facilities in the Estate in satisfactory physical condition?
2. Are the physical estate infrastructure facilities in satisfactory functional conditions?
3. Are the provisions of physical estate infrastructure facilities adequate in the estate?
4. Are the estate residents satisfied with the Social Infrastructure facilities provided in the estate?
5. Are house rents, water and public transportation affordable to the estate residents?
6. Is the estate in a livable condition?

Operational Definition of Terms

Infrastructure – The aggregate of all facilities that allow a society to function effectively. Such facilities include electricity, water supply, drainage, waste disposal, roads, sewage, street lighting, and telecommunications.

Livability – Livability considers the suitability of a residential estate as a place of abode and its ability to meet the needs and aspirations of Festac Town residents in terms of comfortability and satisfaction derivable from environmental quality, security, health care, schools, markets, banks, shopping, recreation, places of worship, noise level, and fire and petrol service stations.

Festac Town Residents – Owner-occupiers and bonafide tenants of houses in Festac Town Housing Estate, Phase 1

Affordability – Ability to meet rent, water, land use charge rates, and public transportation liabilities.

CONCEPTUAL OVERVIEW AND THEORETICAL FRAMEWORK

Housing, in more general and social term, is the process of providing houses for people to live in. Fadahunsi (1985) argues that for housing to be effective it has to be seen in its social setting: That is, housing must be considered beyond ordinary building, but, it must be a building in which the occupier would like to live with happiness. Many factors affect the desire to live in a house: These include the community, the physical setting, the facilities that make the ingress into and out flow from the community easy or difficult, affordability, the availability of essential facilities for use in the house, such as water, and electricity (Onibokun, 1985). Similarly, availability of these facilities, as noted by Hardoy and Setterthwaite (1986) determines the quality of housing area and the survival of its inhabitants. Misra (1986) regarded these facilities as basic infrastructure required for quality urban life. As a precondition for a house to be more attractive and conducive for the occupier, the total physical environment must be considered. The reason is that a planned environment would provide easy communication and transportation, schools, parks, and play grounds shopping centres, open spaces, water and electricity. Similarly, a livable housing area must be adequately drained, while waste disposal systems must be functioning effectively, so as to ensure the cleanliness of the surrounding environment (Fadahunsi, 1985). In characterizing housing delivery, one should consider the needs to eliminate overcrowding, which are the worst pollutant of the environment and a major cause of slums. Clinard (1973) characterizes slum areas as overcrowding, congested housing, area with deficient physical amenities. Therefore, absence of social amenities coupled with inadequate housing unit provision to meet the need of the yearning population may be regarded as the root of slum and urban blight (Barrett and Beardmore 2000).

The social context of housing, presupposes a living environment that contains different types of residential buildings which must be free from social problems such as robbery, assault, diseases, assassination, alcoholism, prostitution, juvenile delinquency, and gambling. According to Weitz, (1973) a physically conducive housing area must be appealing in outlook but he noted that all the bad qualities of human life are the products of slum and blighted housing area, and that slum consists of dwellings of extremely flimsy construction, lacking the basic urban services such as safe

water supply. Onibokun and Kumuyi (1996) characterize slum housing area as an area without open space and other essential amenities. Barrett and Beardmore (2000) agreed that urban poor situation of Indian cities, a typical example of the third world city as an area where majority of inhabitants are suffering from abject poverty. Obudho and Aduwo (1989) further identified slum and squatter settlements as the hub of crime, while congestion is identified as one of the major reasons for criminal behaviour (Obudho and Owuor 1994). Similarly, Adisa (1994) argued that the areas that are very prone to crime in the Lagos Metropolitan area are slum and transition settlements such as Ajegule, Ebute-Metta, Iponri, Ketu, Mushin and Oshodi. Petty thefts and criminal behaviour are common crimes in the slums, resulting from communality, lack of control over children and sharing of social services. This situation has become a tradition that can be handed from generation to generation in most of urban rental housing areas. The worsening situation has made some urban residents in the city of Lagos to seek accommodation in the new housing areas on the outskirts. However, unabated social problems and misdemeanours spread from one urban geographical area to another.

Housing needs go beyond quantitative housing units. One needs to look at the quality of existing housing facilities and the prospects of increasing the existing housing stock. Hence, the effort to meet with housing units required must not jeopardize the relevance of housing quality (Fagbohun, 2008) It is suggested that neighbourhood conditions, structure, internal adequacies of dwelling units, the number of people in the household and their peculiar requirements and traditions, combine to constitute different needs for individual families and householders (Needleman, 1985). In this wise, housing is shelter, and for the shelter to meet the criteria of habitability and liveability, it must meet a specified minimum standards (Onibokun, 1985). Agbola (1994) argued that it is only through development control which comprises land use zoning and planning standard that the ultimate aim of physical planning could be achieved. The aim is to achieve a healthy, conducive, satisfying and aesthetically pleasing environment in which to pursue different kinds of human activities.

Living in a livable housing area has something to do with affordability, safe, reliable and economic transportation choices (NARC 2012). Jakande (2003) observed that in Nigerian urban areas, there is an acute scarcity

of livable residential houses. The reason in that most Nigerians in Urban areas live in rented houses. Individual owners, build a larger percentage of these houses incrementally over many years, and since most of these landlords built their houses for economic purposes, the rents they charge are often very high, and are usually payable two years or more in advance, whereas, the quality of these houses is poor and of the substandard classes. Most unfortunately, much could not be done by the government to arrest the situation, as its contributions are a small fraction of the totality of the existing housing stock. Urban poor therefore have no option than to pay high rents for the substandard housing and its complimentary services.

STUDY AREA

Festac Town (otherwise known as the Black Arts Festival Town) is situated along Badagry Expressway, Lagos, South West Nigeria. The long-term objective is to provide additional housing stock for the people of Metroplitan Lagos after Black Arts Festival of 1977. The entire Town will occupy, in its ultimate phase, an area of 1,770 hectares and will include seven residential communities of 15-20,000 people each. Thus, the ultimate development will be able to accommodate a total number of 24,000 dwelling units or about 120,000 people. The present development (Phase 1) commenced in 1974 and was completed by the end of 1976. The construction of houses and various services was awarded to about 40 contractors in approximately 70 different sites of the project, while the infrastructure works were assigned to 14 major contractors.

Phase 1 covers a total area of about 460 hectares, comprising of three residential communities 1-111, with a combined planned capacity of about 11,000 dwelling units for 55,000 people. The road layout is made up of local roads (cul-de-sacs and minor roads; connector roads - 5th Avenue, 23rd Road, 22 Road, 21 Road, and 20 Road, while the arterial roads are the 1st, 2nd, 4th and 7th Avenues. [Link to Location Map and Report Images of Festac Town, Lagos](#) provided at back end.

The distribution of dwelling units by income groups is shown in Table 1 below:

Table 1: Distribution of Dwelling Units by Income Group

COMMUNITY	LOW	MEDIUM	HIGH	TOTAL
1	2482	638	1100	4220
11	3008	332	723	4053
111	1835	206	461	2502
TOTAL	7325	1166	2284	10775
%	68%	11%	21%	100%

(Source: FHA Brochure, 1976)

Over 1,000 additional units were also provided in the reclaimed area of Community III (also in Phase 1) and thus, the total number of dwelling units in this phase is 12,000 with an expected population of 60,000. Under the present phase, the total number of dwelling units was divided into 68% for low income, 11% for middle income and 21% for high income. The plot sizes for individual units range from 200 to 1,200 square metres.

Table 2: House Types and Classification

TYPE	CLASS	ACCOMODATION	
10	AH4	2-storey, 4-bedroom detached house – Two sitting/dining, one guest room, study, and a 3 room outhouse	HIGH
9	BH3	2-storey, 3-bedroom detached house, two sitting/dining, and a 2 room outhouse	
8	H4H3	2-storey semi-detached 3-bedroom house, one sitting/dining, and a 2 room outhouse	
7	H3M3	2-storey Terrace 3 bedroom houses, one sitting/dining.	MED
6	M3	4-storey block of 8 flats, each with 3-bedrooms, one sitting and dining	
5	M3L2A	4-storey block of 16 flats, each with 3 bedrooms, and one sitting/dining.	

4	F1M2B & F1M2A	2-bedroom bungalow with one sitting/ dining + garage	LOW
3	F1L2	2-bedroom bungalow with one sitting/dining.	
2	L2A	4-storey block of 16 flats (2-bedrooms, and a sitting room)	
1	L/A	4-storey block of 32 flats (one bedroom, and a sitting room)	

(Source: Fortune Ebie, 1980)

RESEARCH METHODOLOGY

The following are the summary of the basic steps followed when conducting the study:

Research Instruments – Data was collected through the questionnaire survey and interviews. The self-administered questionnaire model and In-person interview were used.

Sampling Design, Frame and Sample size – The questionnaire was sent to 210 sample Festac Town residents. The sample size of 210 was selected randomly from the working population of housing units contained in the Local Government Valuation List of Amuwo Odofin, the Local Government Area Administration. Stratified sampling technique was used. Although, there are ten categories of house types in Festac Town Phase 1, stratification was done in three categories in accordance with the major qualifying income levels at the time of original allocation in 1976: Detached/Duplex houses (above N4500; types 8-10) terrace houses/flats/bungalows, (N2400-N4000; types 3-7) flat lets (under N2400; types 1 & 2) and private; with sample population of 45, 96, 60 and 9 respectively.

Questionnaire Structure – The Questionnaire is a schedule. It is a project specific questionnaire designed to elicit physical condition of houses, condition and adequacy of physical estate infrastructure facilities, livability indices such as utility satisfaction level with social infrastructure, and affordability of house rents, water and land use charge rates, and public transportation.

Responses - A total of 171 responses were received; made up of 33 for the Detached/Duplex houses, 90 for terrace houses/flats/bungalows, and 39 for flatlets and 9 for private residential. The response rate is 81.4%. Although the response rate is high, we made effort to investigate any selection bias. Sample selection bias is always a potential problem where there are a significant number of non-respondents. Not accounting for it, if it exists, can lead to bias parameter estimates and misleading conclusions (Vossler and Kerkvliet, 1999).

Interviews and Observation - Interviews were conducted with representatives of the following organizations: National Power Holdings Plc in order to elicit power demand and supply, conversion of underground cables to overhead cables, and outage rate per day; Lagos State Waste Management Authority for waste collection and disposal strategies; Lagos State Water Corporation, for supply and demand estimates, and water rate; Federal Housing Authority, to investigate revised building regulations 1985, Utility maps, infrastructure distribution layouts, illegal structures, and irregular building approvals; Federal Fire Service, for determining fire-fighting capacity; Amuwo Local Government Authority, for verification of valuation list and land use charge rates; Two Estate Surveying firms based in Festac Town, to obtain evidence of rental and capital values; 10 Shop Owners; Community and Close Chairmen Forum, for security matters and Festac Town Residents Association matters; Nigeria Police Force, for security, police patrol, and traffic offences. The researcher also carried out a structured observation of the Estate.

Method of Data Analysis

Descriptive statistics based on indexed percentage distribution of responses on housing conditions/interior building amenities; condition and adequacy of estate physical infrastructure facilities, livability factors such as utility satisfaction level with social infrastructure, and affordability, constitute the major variables, each having sub-variables. Chi-square Goodness of Fit test of significant difference between theory and expected proportions.

RESULTS AND ANALYSES

The descriptive statistics of the responses in respect of conditions of houses/ internal building amenities, condition and adequacy of physical estate infrastructure facilities, utility satisfaction level with social infrastructure, and affordability of house rents, water and land use charge rates, and public transportation, are presented in Table 3 – 8 below:

Table 3: Condition of Houses/internal Building Amenities

Section One:						
	N	VB	B	F	G	VG
<i>(i) Physical Condition of houses</i>						
Physical condition of house floor	171	-	-	0.086	0.386	0.343 NS
Structural condition of external walls	171	-	-	0.043	0.386	0.386 NS
Physical condition of windows	171	-	-	0.214	0.329	0.271 NS
Physical condition of doors	168	-	0.014	0.300	0.300	0.186 NS
Physical condition of ceiling	165	-	-	0.186	0.329	0.271 NS
Physical condition of roof	171	-	0.014	0.186	0.400	0.214 NS
Condition of exterior painting	165	-	0.114	0.200	0.300	0.171 NS
<i>(ii) Internal Building Amenities</i>						
Physical condition of water closets	171	0.071	0.029	0.271	0.214	0.229 NS
Physical condition of bathroom	171	-	0.014	0.300	0.300	0.200 NS
Physical condition of water taps	171	0.271	0.229	0.143	0.114	0.029 S
Condition of corridor and external lighting	171	0.014	0.157	0.214	0.243	0.186 NS

Physical condition of kitchen	171	-	0.086	0.243	0.300	0.186 NS
Physical condition of laundry	120	0.086	0.114	0.243	0.071	0.057 S
Condition of interior painting	171	-	-	0.286	0.400	0.129 NS
N-no. of respondents; VB-Very Bad; B-Bad; F-Fair; G-Good; VG-Very Good; S-Difference Significant; NS-Difference not significant						

(Source: Field Survey, 2013)

Section one of the study questionnaire inquired about the physical condition of the buildings, and internal building amenities. An aggregated 81.5% of the respondents rated condition of house floor and external walls as either fair, good or very good; windows, doors and ceiling, roof, and exterior painting were rated 81.4%, 78.6%, 60%, 61.4%, 80%, and 67.1% respectively. This indicates that the conditions of the buildings are generally good. The conditions of the internal amenities were also rated as follows: water closet (71.4%), bathroom (80%), water taps (28.6%), corridor and external lighting (64.3%), kitchen (72.9%), laundry (37.1%), and interior painting (81.5%). The indication is that the physical conditions of water taps and laundry are bad.

Table 4: Condition of Estate Physical Infrastructure Facilities

Section Two:						
	N	VB	B	F	G	VG
Condition of access roads, minor roads, and footpaths	171	0.221	0.386	0.086	0.071	0.021 S
Condition of street lighting	171	0.414	0.257	0.100	0.029	0.014 S
Condition of drainage system	171	0.157	0.214	0.357	0.071	0.014 S
Condition of electricity supply lines, and cable network	171	0.129	0.257	0.414	0.014	- S

Condition of water supply lines and pipework	171	0.514	0.171	0.071	0.014	0.043 S
N-no. of respondents; VB-Very Bad; B-Bad; F-Fair; G-Good; VG-Very Good; S-Difference Significant; NS-Difference not significant						

(Source: Field Survey, 2013)

Section two inquired about the condition of the estate physical infrastructure facilities. As shown in Figure 2 above, an aggregate of 17.8% rated the condition of access roads, minor roads, and foot paths as fair, good, or very good. Street lighting, drainage systems, electricity and water supply lines were rated 14.3%, 44.2%, 42.8%, and 12.8% respectively. The indication is that the estate physical infrastructure facilities are in deplorable condition.

Table 5: Adequacy of Estate Physical Infrastructure Facilities

Section Three:						
	N	NI	NA	FA	A	
Electricity supply	171	0.010	0.686	0.214	-	S
Water supply	171	0.114	0.743	0.057	-	S
Roads and Streets	165	-	0.686	0.457	0.243	S
Street lighting	171	0.557	0.557	0.100	-	NS
Internet/computer services	165	-	0.129	0.500	0.257	S
Drainage facilities	171	-	0.657	0.257	0.100	S
NI-Not Interested; NA-Not Adequate; FA-Fairly Adequate ; A-Adequate; S-Difference Significant; NS-Difference not significant						

(Source: Field Survey, 2013)

Section three asked the respondents to elicit the adequacy of the estate physical infrastructure. 68.6% indicated that mains electricity supply is adequate within the estate, while 21.4% rated it fairly. Respondents rated water supply, street lightening, and drainage facilities as not adequate (74.3%, 55.7%, and 65.7% respectively). The response indicates that apart from internet services that is fairly adequate (50%), water, roads, street lighting and drainages are not adequately provided. The services are therefore inefficient.

Table 6: Level of Satisfaction with Social Infrastructure Facilities

Section Four:								
			VS	S	NSn	D	VD	
Security:	Police Patrol	156	0.143	0.386	0.214	-	0.08	NS
	Neighbourhood Watch	162	0.471	0.114	0.143	0.043	0.18	NS
	Local Vigilante	162	0.457	0.143	0.029	0.157	0.09	NS
Health Care:		159	0.014	0.200	0.314	0.229	0.18	S
		168	0,086	0.314	0.271	0.129	0.08	NS
		162	0.086	0.229	0.286	0.171	0.14	NS
Schools:	Infant Academy	165	0.414	0.029	0.343	0.200	0.18	NS
	Primary Schools	171	0.486	0.08	0.100	0.229	-	NS
	Secondary Schools	171	0.457	0.057	0.300	0.113	-	NS
	Tertiary Institutions & Continuing Education	159	0.463	0.143	0.086	0.071	0.13	NS
	Libraries	171	0.009	0.013	0.100	0.443	0.27	S
	Police Station & Services	168	-	0.300	0.344	0.157	0.39	NS
	Fire Service	171	0.086	0.500	0.229	-	0.08	S
Entertainment:		162	0.043	0.257	0.371	0.100	0.11	S
		159	0.071	0.443	0.214	0.029	0.12	S
		168	0.714	0.086	-	-	0.09	NS
	Post Office Services	171	0.386	0.143	0.286	0.019	0.08	NS
	Markets	171	0.298	0.171	0.100	0.243	0.06	NS
	Places of Worship	171	0.310	0.280	0.057	0.157	0.28	NS
	Banking Services	171	0.560	0.23.2	0.100	0.186	0.08	NS
	Shopping Centres	171	0.144	0.400	0.110	0.246	0.08	NS
	Petrol Filling Stations	171	0.129	0.384	0.200	0.171	0.14	NS
	Open spaces and Playgrounds	171	0.229	0.329	0.186	0.071	0.09	NS
	Repair Workshops	171	0.443	0.200	0.271	0.100	0.08	NS

Waste Collection and disposal	165	0.257	0.387	0.043	0.100	0.07	NS
Sewage Collection and disposal	171	0.343	0.329	0.129	0.014	0.08	NS
VS-Very Satisfied; S-Satisfied; NSnD-Neither Satisfied nor Dissatisfied; Dissatisfied; Very Dissatisfied; S-Difference Significant; NS-Difference not significant							

(Source: Field Survey, 2013)

Section four asked respondents about their level of satisfaction with the social infrastructure provided in the estate. 52.9% were satisfied with police patrol; 58.5% and 60% with neighbourhood watch and Local vigilante respectively. Whereas 40.9% were dissatisfied with hospital services, 40% and 30.5% okayed the health centres and clinic. The respondents were also satisfied with the schools (Infant Academy 44.3%, Primary Schools 56.6%, Secondary Schools 51.4% and Tertiary 60.6%. 71.3% are dissatisfied with library resources, and 54.7% with police services. 58.6% are satisfied with fire services. Respondents are dissatisfied with entertainment facilities in the Estate (21%, 41% and 9% for meeting halls, club houses and cinemas. 52.9% and 46.9% are satisfied with post office and markets respectively. Places of worship, banking services, shopping services, petrol filling stations, open spaces and playgrounds, repair workshops, waste /sewage collection and disposal have 59%, 79.2%, 54.4%, 51.3%, 55.8%, 64.3%, 64.4%, and 68.2% rates of satisfaction respectively. The indication is that the residents are satisfied with the following services: police patrol, neighbourhood watch and vigilante, health centres, clinics, schools, post offices, markets, places of worship, banking services, petrol filling stations, open spaces and playgrounds, repair workshops, waste and sewage collection and disposal. However, there are indications that residents are dissatisfied with hospital and library services, and entertainment facilities.

Table 7: Affordability

Section Five:						
	N	NAp	Naf	SA	Af	
House rental	162	0.171	0.271	0.214	0.214	NS
Water rate bills	171	0.014	0.271	0.114	0.114	S
Electricity bills	171	0.014	0.186	0.414	0.200	NS
Public Transportation costs	171	-	0.171	0.429	0.214	NS
Land Use Charge rate	150	-	0.283	0.419	0.26.3	NS
SA-Somewhat Affordable; A-Affordable; S-Difference Significant; NS-Difference not significant						

(Source: Field Survey, 2013)

We inquired in Section Five about affordability. 42.8% of the respondents affirms affordability of house rental, while 27.15 recorded non affordability; 60.4% for electricity bills, 64.3% for public transportation, 68.2 for Land Use Charge rate. Water rates are not affordable (27.1%). Non responses account for the short fall in the percentage aggregation. It indicates that the estate is affordable in terms of house rental, electricity billing and public transportation costs. However, water rate is exorbitant.

Table 8: Occupancy Rate per room for all House Types

TYPE	CLASS	Occupancy Rates per Room
10	AH4	2 persons per room
9	BH3	2 persons per room
8	H4H3	2 persons per room
7	H3M3	2 persons per room
6	M3	2 persons per room
5	M3L2A	2 persons per room
4	F1M2B & F1M2A	3 persons per room 4 persons per room
3	F1L2	4 persons per room
2	L2A	4 persons per room

1	L/A	5 persons per room
	Mean Occupancy Rate	30/10 3persons per room

(Source: Field Survey, 2013)

From Table 4 above, the average occupancy rate is 3 persons per room; indicating over-population and sustained pressure on available physical and social estate infrastructure facilities and services. The table of Rental and Market Values is presented below.

Table 9: Rental and Market Values of Festac Properties (December, 2012)

House Type	Rental Value p.a.	Market Value
1	N200,000-N250,000	N3.0m – N3.5m
2	N300,000-N350,000	N6.0m – N6.5m
3	N550,000-N600,000	N15m – N16m
4	N600,000-N630,000	N16m – N17m.
5	N350,000-N400,000	N8.0m – N9.5m
6	N600,000-N650,000	N11m – N12m
7	N700,000-N800,000	N22m – N23m
8	N1.2m-N1.3m	N26m – N28m
9	N1.5m-N1.6m	N45m – N50m
10	NN1.7m-N1.8m	N55m – N60m

(Source: Field Survey, 2013)

We investigated the current rental and capital values of the various house types and the result is as shown in Table 3 above. This indicates that the rental and capital values are comparatively higher than those of similar neighbouring estates, such as Mile 2 Jakande and Satellite Town. Festac Housing Estate should therefore be less affordable.

SUMMARY OF FINDINGS AND DISCUSSION

Population and occupancy rate:

According to data obtained from Amuwo Odofin Local Government, the population of Festac Town (Phase 1) is about 900,000 (an increase of 1500% over the planned population of 55,000). This gives a population density of approximately 1950 persons per hectare or 785 persons per acre or 130 persons per standard plot of land, whereas the average number of persons per room (occupancy ratio) is 3.0.

Physical conditions of buildings:

The physical condition of house floors, walls, roofs and ceilings, exterior painting, and the conditions of Internal Building Amenities, such as water closets (WCs), bathrooms, external and corridor lighting, kitchens, and interior paintings are generally good. Water taps and laundries showed significant difference.

Condition of estate physical infrastructure facilities:

The condition of estate physical infrastructure facilities is deplorable. Difference is statistically significant. From observation, many roads are not motorable and many are obstructed by illegally erected makeshift structures. Flooding is recorded in some 4th and 7th Avenue areas after downpour. National Power Holdings Plc reported that over 2.5km of their cable network would need to be replaced within the next 18 months to avoid a major breakdown in power distribution to the Estate.

Adequacy of estate physical infrastructure facilities:

Estate physical infrastructure facilities are generally inadequate. Internet and computer services abound everywhere.

Level of Satisfaction with Social Infrastructure Facilities:

On security, the police reported a decline in crime rate by 25% over the past 12 months, but did not record remarkable drop in traffic and other civil offences. There is one police station located at 2nd avenue. It is usually congested with complainants, criminals and seized vehicles, with their activities spilling over to the main 2nd Avenue. There is one fire service station located at 3rd avenue. An interview revealed that the fire station lacked equipment and personnel.

Most of the shops are individually owned with a few clustering. Interviews with the shop-owners reveal that many of them also reside in their shops. A sizeable number of open spaces and playgrounds have been reallocated for development while many others have been encroached upon by squatters. The buffer zone shielding the Town from Lagos-Badagry Expressway are now cleared and occupied by several places of worship and repair workshops. Interview revealed that many of the development are illegal structures. Lagos State Waste Management Authority (LAWMA) confirmed that the nearest waste disposal site is at Soulos, Ojo. However, a temporary open dump site is in use along 2nd Avenue, It is not well maintained. There are incidences of overflowing sewage drains as well as buildings erected directly on utility lines. Residents are satisfied with the social infrastructure facilities, except hospital, library, and entertainment facilities.

Affordability:

The rents paid for accommodation in Festac Town is affordable. Table 5 above shows rental and capital values for Festac Town properties as at July, 2013. Prospective tenants are required to make at least one year down payment exclusive of the usual agency and legal fees. Public transportation, electricity bills, and land use charge rates are also affordable, while water rate is exorbitant.

The generally good condition of the houses is attributable to the high quality materials used at the time of construction several years ago. Concrete walls with reinforcements were used; good quality woods as roof trusses, concreted floors, good ceiling materials, and paintings. However, the doors and windows are dilapidating: Good quality bath and water closet materials are in good physical condition. The standards of building construction in the estate were unprecedented in the annals of Nigeria's construction history. According to Fagbohun (2003) infrastructure are the basic requirement of life and its adequacy and worthiness set pace for development and the quality of life. Similar quality of works could also be reported on the infrastructure, but population growth of residents exerted pressure on the existing infrastructure services, stretching them beyond their elastic limits. The ravaging poverty, corruptive tendencies and inflation are likely accountable for the neglect of infrastructure maintenance activities by relevant authorities and residents alike. Spiral inflation and resultant fall

in money value may have impinged slightly on affordability of residents while factors such as government's insensitivity to the plight of the people and lacklustre private sector participation in infrastructure development contributed negatively, and in no small measure, to the livability status of the Estate in terms of condition of sewage systems, street lighting, water supply, library facilities, waste disposal and collection, and recreation.

Research results justify the inadequacy of physical estate infrastructure. Daily power requirement for Festac Town is about 550 megawatts, whereas less than 250 megawatts is supplied daily leading to power outage of 12-18 hours daily. National Power Holdings Plc capacity for electricity generation has been on the decline in recent times hence, there is a short fall in distribution. In contrast with relevant research finding, the researcher's observation revealed that mains water supply to Festac Town is unavailable. According to Close Chairman's Forum, supply to the town was disconnected some 58 months ago following refusal of residents to pay what they considered "LSWC's exorbitant water rates". The residents resorted to alternative sources of water supply, such as digging wells, installing boreholes and water tanker supply. A number of thoroughfare and minor roads have been rendered inaccessible through their closure even in the daytime, thereby impinging on circulation and movement. Street lighting system is available in Festac Town but dysfunctional. The Close Chairman's Forum disclosed that it has remained so for more than 25 years now.

CONCLUSION

All the research questions have been answered. The estate is bedevilled by spiral population explosion and resultant overcrowding, with an occupancy ratio of 3 persons per room (WHO standard – 2 persons per room) and an average population density of 1950 persons per hectare. The residents' population needs to be controlled to reduce overcrowding and spread of communicable diseases.

The buildings are generally in satisfactory physical condition, well ventilated and painted externally. The researcher's site observation confirmed that the buildings are structural sound. Internal building amenities are available, and in satisfactory condition, except their water taps and

laundry. Estate physical infrastructure facilities are in deplorable condition. The residents are satisfied with security, health centres and clinics, schools, police and fire services, post office, markets, places of worship, open spaces and playgrounds, banking services, shopping centres, petrol filling stations, workshops, waste and sewage collection/disposal. However, they are dissatisfied with hospital, library and entertainment facilities. Rents for vacant accommodation, land use charge rates, and public transportation are generally affordable, except water rate. The rental and capital values in the Estate are comparatively higher than those of similar neighbouring estates, such as Mile 2 Jakande and Satellite Town. The work concludes that the Estate is significantly able to meet the needs and aspirations of its residents.

Implications of Research Findings

There are possibilities of further neglect in the future if the present harsh economic climate persists, in which case, the Estate and its residents are at the risk of degeneration; the estate into a slum area, and the residents' health may suffer thereby. There are tell tales observable now, such as condition of sewage system, street lighting, water supply, library facilities, waste disposal and collection, and recreation. Onibokun and Kumuyi (1996) characterised slum housing area as an area without open space and other essential amenities, while Adisa (1994) concluded that such areas are prone to crimes and other social menace. Physical housing conditions are good, but deteriorating social and physical infrastructure facilities may make Festac Town "unlivable" in the 21st Century. With the likelihood of continual uncontrolled population increase of residents and squatters that are attracted for commercial purposes, the pressure on existing infrastructure facilities could lead to acute inadequacies and accelerated deterioration of their conditions. Areas of further research for livability should include noise level and safety, household-bus termini distance, transportation choices, and environmental quality.

Recommendations

Festac Town needs to be upgraded with an integrated conservation strategy under a FESTAC TOWN IMPROVEMENT PROJECT (FESTIP). The initiative is to provide infrastructure facelift, population control and community development as linked interventions. The Improvement Project

should be attached to the Office of the Amuwo Local Government Area Chairman, and the operators of the Project are to enlist the support of the Federal Housing Authority and the Festac Police. FESTIP should comprise of representatives of the Local Government, Federal Housing Authority, Festac Town Residents Association, an Estate Surveyor and Valuer and a Town Planner. It should be empowered financially and legally through relevant byelaws to carry out the following tasks:

1. Demolition of all structures, the development of which are inconsistent with the provisions of section 1 of FHA Revised Approval To Building Plans Regulation of 1985 which states in part as follows: “Any unapproved development shall be liable to demolition after a notice has been duly displayed.....” Immediate suspension and subsequent reappraisal of building permits for new development, particularly for shops and places of worship in order to control and reduce resident population and corresponding pressure on available social services.
2. Restoration of damaged street lightening system to enhance security and complement routine police patrol in the Estate.
3. Replacement of broken water pipes and restoration of water supply by mediating in the face-off between the residents and Lagos State Water Corporation.
4. Creating youth employment in order to reduce daytime idle population and touting. For example, the youth may be engaged in minor road repair works.
5. Ensuring that the sewage treatment plant is refurbished to function at full capacity in order to ameliorate the slow dislodgement of sewage and its treatment.

The Local Government and FHA should enlist the cooperation and understanding of all Festac Town residents through the Festac Town Residents Association as invaluable partners in progress. Nothing suggests that such understanding and cooperation will not be forthcoming.

Link to Location Map of Festac Town, Lagos:

<http://maps.google.com/maps?oe=utf-8&rls={moz:distributionID}:{moz:locale}:{moz:official}&q=map+of+festac+town+lagos&um=1&ie=UTF-8&hq=&hnear=0x103b88c58ab93f09:0xba794b2a62413ee2,Festac+Town,+Nigeria&sa=X&ei=vbTCUfDAAqbwiwKQwIGwAQ&ved=0CCsQ8gEwAA>

Report Images of Festac Town

<https://www.google.com/search?q=map+of+festac+town+lagos&rls={moz:distributionID}:{moz:locale}:{moz:official}&tbm=isch&tbo=u&source=univ&sa=X&ei=vbTCUfDAAqbwiwKQwIGwAQ&ved=0CFoQsAQ&biw=1024&bih=518>

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Evaluating Fear of Crime using the Structural Equation Model

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ABSTRACT

Fear of crime is based on three preferences which are crime-specific, crime problems in neighbourhood and environmental factors such as physical disorder, social disorder and victimization. Most findings by the researcher found that those dimensions show a high level of reliability to measure the fear of crime. Therefore, in this paper the dimensions of fear of crime were tested using confirmatory factor analysis with a series of measurement model. The validation and confirmation of the fear of crime construct was done using Confirmatory Factor Analysis (CFA) via AMOS. 19 items were initially involved in measuring the three fears of crime dimensions, but 6 items were excluded from the list of variable indicators of the fear of crime dimensions because these items have a factor loading below 0.3. The results of this study indicate that the crime problems in neighbourhood (CPN) and environmental factors (EF) dimensions achieved good fit indices where the values for GFI, TLI and CFI exceeded 0.90 and the RMSEA value was less than 0.05. The CPN dimension on the other hand, was found to be the best indicator to measure fear of crime in neighbourhoods with the value of standardized coefficients at $r=0.91$.

Keywords: crime, fear of crime, environmental, confirmatory factor analysis, structural equation modeling

INTRODUCTION

Beginning from the late 1960s, fear of crime has become a major social problem demanding scientific understanding and social reaction (Renauer, 2007). Therefore, fear of crime has attracted a significant amount of research interest in recent years since it was developed as a research focus in the UK (Evans & Fletcher, 2000). Social research in Europe, North America and elsewhere regularly find widespread fear of crime (Gray, Jackson, & Farrall, 2008). Studies such as the European Social Survey, the British Crime Survey and the International Crime Victim Survey all substantiate the view that all across Europe fear of crime is common and a problem in its own right, separate from crime itself (Hale, 1996).

The prior research posits three dominant factors to explain citizens' fear of crime namely crime problems in neighbourhoods (Farrall & Gadd, 2004; Roh & Oliver, 2005), crime-specific (British Crime Survey, 2005, , 2008; Gray, Jackson, & Farrall, 2008) and environmental factors (Franklin & Franklin, 2009; Nasar & Fisher, 1993; Ross & Jang, 2000). These dimensions of fear of crime were found to have a high internal reliability level that is a Cronbach alpha value of between 0.07 to 0.08 (Franklin & Franklin, 2009; Renauer, 2007). In this study, those dimensions were tested using a series of confirmatory factor analysis (CFA) models to develop a measure of fear of crime that can be used among individuals' and community's feelings of fear. These CFA models are based on the factor structured on the basis of a 'good' theory of fear of crime to determine whether there is empirical support for the theoretical factor fear of crime. This study has implications for future measurement of fear of crime for individuals and particularly in residential community.

LITERATURE REVIEW

Fear of crime affects far more people in the United States than crime itself, and there are sound reasons for treating crime and fear of crime as distinct social problems (Warr, 2000). The same scenario can be seen in Malaysia where fear of crime is high even though the crime rate has declined (USM, 2008). The phrase 'fear of crime' has been equated with a variety of emotional states, attitudes or perceptions including mistrust of others, anxiety, perceived risk, fear of strangers, concern about deteriorating neighbourhoods or declining national morality (Warr, 2000). There are some definitions of fear of crime by prior research, LaGrange, Ferraro and Supancic (1992) which defined fear as negative emotional reactions generated by crime or symbols associated with crime. According to Warr (2000), fear is not a perception of the environment, but a reaction to the perceived environment. Although fear may result from the cognitive processing or evaluation of perceptual information and fear is not in itself a belief, attitude or evaluation. Fear of crime has a relationship with emotional reaction, a feeling of fear and wariness towards any action that may bring about injury as a result of being assaulted (Pain, 2000; Ross & Jang, 2000). According to Pain (2000), fear is the manifestation of a feeling that one is in danger. Some studies have postulated that fear of crime is assumed to be signs or symbols of criminal victimization (Lee, 2001; Stephen, Emily, & Jonathan, 2007) as the frequency of one becoming a victim of crime will induce a higher feeling of fear of crime (Gray, Jackson, & Farrall, 2008). Nevertheless, individual understanding of fear of crime differs as it depends on the situation in which one feels fear of crime (Schneider & Kitchen, 2007), design and the environment (Spinks, 2001) as well as their psychological and social life factors (Minnery & Lim, 2005).

Numerous theoretical developments have sought to explain the various dynamics of fear of crime. In this study fear of crime was measured using three preferences; (a) crime problems in neighbourhoods to measure crime problems in neighbourhoods; (b) crime-specific and; (c) environmental factors. Crime problems in neighbourhoods were measured by asking respondents to rate how big the crime problem is in their neighbourhoods (Gibson, Zhao, Lovrich, & Gaffney, 2002) within a period of 12 months with regards to the following: (a) house breaking or theft, (b) vehicle theft, (c) acts of vandalism such as broken windows, damage to public property,

(d) drug dealing; and (e) physical assault on individuals. Conversely, crime-specific measures a respondent's general sense of safety (Ferraro & LaGrange, 1987). The measure taps emotional fear by asking respondents how often they worry about specific types of crime. The specific questions used to create this measure of fear come from the British Crime Survey (2005) and Renauer (2007) who asked respondents, "Within a period of 12 months, how much do you worry about the following: (a) house breaking, (b) physical assault, (c) vehicle theft, (d) sexual harassment and (e) rape. Responses were based on a Likert-type scale continuum from 1 (not worried at all) to 8 (extremely worried).

The basic assumption in environmental factors construct is that neighbourhood incivilities are the manifestations of physical and social disorders that threaten individual residents more than the actual experience of crime (Worrall, 2006). Physical disorder refers to disorderly surroundings such as abandoned cars, vandalized property, trash, vacant houses and deteriorated homes (Nasar & Fisher, 1993; Painter, 1996). Social disorder refers to disruptive elements such as, public drunkenness, drug addiction, prostitution, juvenile loitering, delinquent behaviour and homelessness (Joseph, 1997; Nasar & Fisher, 1993; Perkins, Weeks, & Taylor, 1992; Renauer, 2007). Neighbourhood residents who perceived disordered social and physical local surroundings are more likely to exhibit higher levels of fear (Lewis & Salem, 1986; Skogan, 1990; Wilson & Kelling, 1982). Research on fear of crime has consistently found a positive relationship between neighbourhood disorders and fear (Renauer, 2007). Meanwhile, direct victimization such as hearing news of crime either experiences of being a crime victim among relatives, friends, neighbours or from the media also increases fear of crime (Banks, 2005; Ferguson & Mindel, 2007; Nasar & Fisher, 1993). According to Reid (2000), a person who has never been a victim of crime may also exhibit fear of crime. In fact this type of people is said to feel a higher level of fear as compared to a real crime victim (Farrall & Gadd, 2004; Skogan & Maxfield, 1981). Indirect victimization is caused by a traumatic feeling and fear on personal safety should he become a victim of crime (Reid, 2000).

Environmental factors have been divided into three main dimensions - physical disorder, social disorder and indirect victimization. These dimensions were measured by the following questions: "In a period of 12

months, how far do you agree with the following statements: (a) I am fearful when confronted with acts of vandalism, (b) I am fearful when I walk near overgrown areas or dense undergrowth, and (c) I am fearful when I walk in abandoned housing estates”. Social disorder was measured by the following questions: “(a) I am fearful when I come across loiterers, (b) I am fearful when I run into drunkards, and (c) I am fearful when I come across homeless people”. Direct victimization was measured by the following questions: “(a) I am fearful when I hear news of crime in the media, (b) I am fearful when I hear accounts or experiences of being crime victims from friends or neighbours, and (c) I always relive visuals of crime after reading news of acts of crime”. Responses were based on a Likert-type scale continuum from 1 (strongly disagree) to 8 (strongly agree).

All these dimensions have been analysed using confirmatory factor analysis (CFA). CFA is a tool that enables to either “confirm” or “reject” the items to measure the construct. In CFA, a measurement model is used to test how specific variables logically and systematically represent constructs involved in a theoretical model (Hair, Black, Babin, & Anderson, 2006). In other words, measurement model specifies a series of relationships that suggest how measured variables represent a latent construct that is not measured directly. Compared to the use of exploratory factor analysis (EFA), the factors are derived from statistical results and not from theory. This means that the researcher runs the software and lets the underlying pattern of the data determines the factor structure. Thus, EFA is conducted without knowing how many factors really exist or which variables belong with which constructs (Hair et al., 2006).

METHODOLOGY

The respondents in this study come from a population survey of 476 residents in Presint 9B Putrajaya and Seksyen 4, Bandar Baru Bangi, Selangor Malaysia. Only 171 residents participated in the questionnaire survey. A face to face interview approach was conducted in this study to ensure that the respondents truly understood the questions that were asked of them. The respondents involved in this study comprised home owners or the main breadwinners of the household. Therefore, either the husband or the wife was chosen to be the study respondents. The survey was undertaken from

Monday to Sunday, beginning from 9 am to 7 pm. In the event respondents could not be interviewed during working days, an appointment for the survey was made on weekends or on days as suggested by the respondents. The respondents required at least 30 to 40 minutes to comprehensively answer the questionnaires as stipulated by the duration required by Perkins et al., (1992). If the respondents were not at home at the time of survey, a revisit was done at a different time and day. The maximum number of visits was set at 5 times, after which if the respondents were still unable to be interviewed it was assumed that the respondents were not interested to participate in the questionnaire survey.

RESULTS AND DISCUSSION

The main objective of this working paper was to conduct validation on the fear of crime construct which consisted of the three main dimensions; (a) crime problems in neighbourhoods with five items, (b) crime-specific; which also have five items to measure the respective dimension and (c) environmental factors with 15 items to measure the respective dimension. The development of these items was based on previous research (Banks, 2005; British Crime Survey, 2005; Gibson, Zhao, Lovrich, & Gaffney, 2002; Nasar & Fisher, 1993; Painter, 1996; Renauer, 2007). All the items were measured using interval data within a Likert scale that was comprised of 8 answer choices (Alreck & Settle, 2004) of (1) highly unproblematic to (8) highly problematic for crime problems in neighbourhoods dimension, (1) not fearful at all to (8) extremely fearful for crime-specific dimension and (1) highly disagree to (8) highly agree for environmental factors dimension.

The validation for fear of crime construct was done by conducting a confirmatory factor analysis (CFA) using AMOS and SPSS software. CFA is a measurement model which is developed by the correlation between latent variables and several indicators (items) or known as variable and error manifests. The CFA method is able to ensure and validate the items used in measuring latent variables by taking into account the value of the variances as opposed to the factor analysis (FA) which only explores an item and suggests a factor for each of the items. According to Joreskog and Sorbom (1993), the evaluation of the measurement model is done by assessing the quality of the items for each construct individually (or known as the con-

generic model) and followed by retesting the constructs simultaneously, which is known as confirmatory factor analysis (CFA). Using Bentler's (1995) suggestion, an appropriate number of samples ($N=171>150$) gives reasonable weightage to use CFA in order to establish a confirmatory test.

The measurement models for each fear of crime construct which is a crime problem in a neighbourhood, crime-specific and environmental factors were developed as shown in Figure 1.

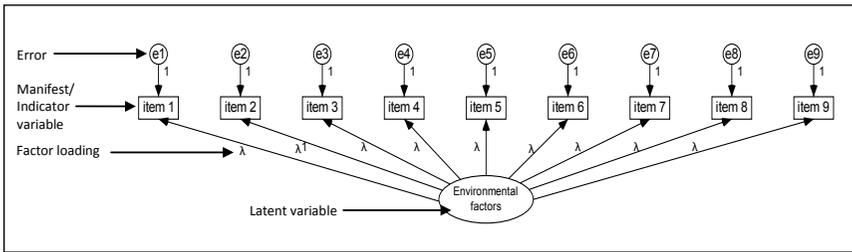


Figure 1: A First-Order CFA Model for Fear of Crime Construct

Figure 1 demonstrates the measurement model which is comprised of one latent variable (environmental factor) which is measured by nine items (Item 1 to Item 9) and each item has its own measurement error. Every dimension of fear of crime will undergo the first order CFA model. The quality of each item that develops this construct is determined by the factor loading as symbolized by λ . Factor loading imparts information about the total number of variances contributed by each item towards the measure construct and the factor loading value of 0.30 (Sellin & Keeves, 1997) was used as a cut-off value to determine the suitability of the item in measuring the latent variable. Apart from the factor loading value, several indices were employed to judge whether the model tested fits the data, such as Chi-square, Chi-square/degree of freedom ratio, and goodness of fit indices. AMOS provides a variety of fit indices and this study employs the goodness of fit indices as suggested by Hair, Black, Babin and Anderson (2006) such as Root Mean Square of Approximation (RMSEA), Goodness of Fit Index (GFI), Normed Fit Index (NFI), Comparative Fit Index (CFI) and Tucker-Lewis Index (TLI). According to Hair et al. (2006), the value of GFI, NFI, CFI and TLI of 0.9 and above show a well fitted model. As for RMSEA, a value of between 0.03 and 0.08 is considered to be good.

The results of the confirmatory factor analysis (CFA) in the first-order illustrated that the two models have achieved good fit between the models and the data, which are the measurement models for crime problems in neighbourhoods (CPN) and environmental factors (EF). The Chi-square value (X^2) for the CPN measurement model is not significant ($X^2(2)=1.924$, $p>0.05$) and shows good fit between model and data. The values for the fit indices of GFI, CFI and TLI on the other hand exceeded 0.90 and the RMSEA value was less than 0.05. It was a similar finding for the EF model, where the Chi-square (X^2) value was also not significant ($X^2(2)=9.909$, $p>0.05$), the goodness of fit indices of GFI, CFI and TLI also recorded values above 0.90 and the RMSEA value was less than 0.05. The values further strengthen the fit of this measurement model against the data (Schreiber, Stage, King, Nora, & Barlow, 2006). Meanwhile for the crime-specific construct (CS), the measurement model found that Chi-square value (X^2) was significant ($X^2(1)=5.946$, $p<0.05$), but the values for the fit indices of GFI, CFI and TLI recorded values exceeding 0.90 and the RMSEA value was 0.17. This is the best fit measurement model for CS construct based on the data. Several items were eliminated as they possess a factor loading value of less than 0.03 (Sellin & Keeves, 1997).

On the other hand, the level of reliability was determined through the internal consistency for each factor that was determined by calculating the Cronbach's Alpha value as shown in Table 1. Table 1 report that the crime problems in neighbourhoods (CPN) dimension has an alpha value of 0.88, the crime-specific (CS) dimension has a value of 0.93 and the environmental factors (EF) dimension has an alpha value of 0.95. This shows that all three dimensions have a good reliability value as the Cronbach's Alpha value exceeds 0.7 (Hair, Black, Babin, & Anderson, 2006). The findings from the first-order measurement model for every latent variable for fear of crime construct were used in the second-order model. In this second-order model, fear of crime (FOC) acts as a latent variable measured by the three dimensions as the first order factor which became the observed variables for FOC. The CFA was then employed in this study to examine whether the extracted factor structure that had been defined by a hypothesis model fitted the data adequately. The goodness of fit indices (GOF) such as GFI, CFI and TLI of at least 0.9 and above and a RMSEA value of less than 0.06 (Schreiber, Stage, King, Nora, & Barlow, 2006) were used to ensure fitness of data. The hypotheses second-order model is shown in Figure 2.

Table 1: Results of Fear of Crime Measurement Model Variables

Fear of Crime dimension	Items	Description of Items	Factor Loading	Reliability
Crime Problems in Neighbourhood (CPN)	Item 1	House breaking or theft incidences	-	0.88
	Item 2	Vehicle theft (automobile, motorcycle, van, bicycle, lorry)	0.74	
	Item 3	Vandalism such as breaking windows, public property thrashing	0.77	
	Item 4	Drug dealing problems	0.87	
	Item 5	Physical assault on individuals such as battery or assault	0.87	
Crime-specific (CS)	Item 1	House breaking	-	0.93
	Item 2	Physical assault	0.90	
	Item 3	Vehicle theft	0.70	
	Item 4	Sexual harassment	0.96	
	Item 5	Rape	0.97	
Environmental factors (EF)	Item 1	I am fearful when I come across acts of vandalism	-	0.95
	Item 2	I am fearful when I walk near overgrown areas or thick undergrowth	0.86	
	Item 3	I am fearful when I walk near abandoned housing schemes	0.94	
	Item 4	I am fearful when I come across loiterers	0.84	
	Item 5	I am fearful when I come across drunkards	0.95	
	Item 6	I am fearful when I come across homeless people	0.92	
	Item 7	I am fearful when I hear news of crime in the media	-	
	Item 8	I am fearful when I hear accounts or experiences of being crime victims from friends or neighbours	-	
	Item 9	I always relive visuals of crime after reading news of acts of crime	0.78	

Note: (-) = Items eliminated through the measurement model process

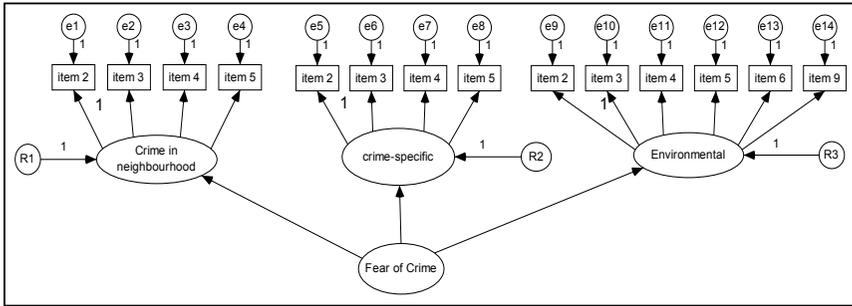


Figure 2: A Priori Hypotheses Second-Order Model

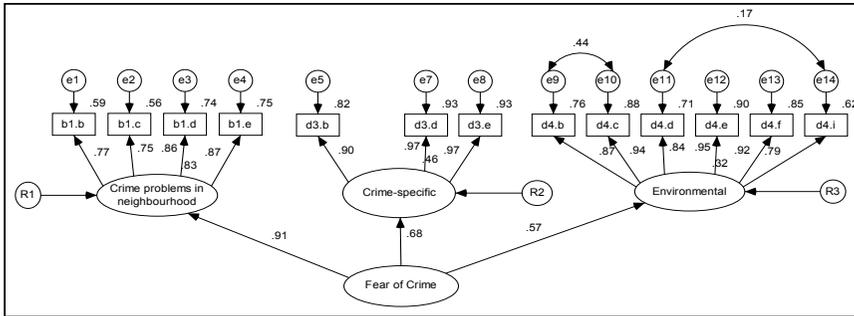


Figure 3: A Second-Order CFA Fear of Crime Model

The final result of the Confirmatory Factor Analysis (CFA) is shown in Figure 3, and GOF indicates that the Chi-square (X^2) value is significant ($X^2(60)=142.216, p<0.05$), and Chi-square/df=2.370. In the model fits, the findings further show that RMSEA=0.09, CFI=0.96, TLI=0.95, and GFI= 0.89 indicating that this is the best model fitted based on the data collected. The second-order model indicates that the crime problems in neighbourhoods (CPN) variable was best measured by four indicators namely Item 2 (b1.b), 3 (b1.c), 4 (b1.d) and Item 5 (b1.e); crime-specific (CS) was extracted by 3 items namely Items 2 (d3.b), 4(d3.d), and 5 (d3.e); while the environmental factors (EF) variable was measured by six indicators namely Items 2 (d4.b), 3 (d4.c), 4 (d4.d), 5 (d4.e), 6 (d4.f) and 9 (d4.i). Fear of crime (FOC) was found to be best measured by three dimensions namely CPN, CS and EF. In Figure 3, the double-headed arrow is used to

imply covariance between two measurement variables which was based on the modification indices, and the level of covariance between two errors namely e9 and e10 also e11 and e14 were discovered to be high. It implies that Item 2 (d4.b) error in the EF variable was highly correlated with that associated with the measurement error of Item 3 (d4.c), and Item 4 (d4.d) error was highly correlated with that associated with the measurement error of Item 9(d4.i) in the same variable. Based on the Standardized coefficients between latent variables and the FOC construct, it was revealed that the CPN ($r= 0.91$) dimension represented FOC better than the other two dimensions (CS; $r= 0.68$, EF; $r= 0.57$).

CONCLUSION

The objective of this paper is to validate the fear of crime construct by using the Confirmatory Factor Analysis test with the series of measurement model. Based on findings of past research the fear of crime construct was measured using crime-specific (British Crime Survey, 2005; Renauer, 2007), environmental factors (Ferguson & Mindel, 2007; Franklin & Franklin, 2009; Nasar & Fisher, 1993) and problems in neighbourhoods (Gibson, Zhao, Lovrich, & Gaffney, 2002) constructs whilst demonstrating that these dimensions yield a high internal reliability level. However, the said measurement was based on exploratory factor analysis (EFA) that was conducted without knowing how many factors really exist or which variables belong with which construct. Thus, instead of allowing the statistical method to determine the number of factors and loadings as in EFA, CFA statistics are also able to determine how well theoretical fear of crime matches reality (the actual data). This means that CFA can “confirm” or ‘reject” the preconceived theory. Based on the above, the findings of this paper indicate that the three FOC dimensions namely CPN, CS and EF may be validated as the dimension that could measure fear of crime whereby the CPN dimension is the best dimension to measure fear of crime in neighbourhoods.

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Expected Success Factors in the Procurement of Public Sector Projects in Nigeria: A Stakeholder Analysis

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ABSTRACT

Perceptions, whether right or wrong, have the capacity for determining human interactions and responses to issues. Analysing and ultimately managing stakeholders' views have been recognized as necessary for the success of projects or programs. This research set out to investigate the expectations of client and consulting organizations in the Nigerian construction industry on priorities in public project procurement or implementation. An opinion survey of client and consulting organizations in some selected states of Nigeria was done. A set of 155 questionnaires was administered through the use of purposive and snowballing techniques on clients and consulting organizations. 65 completed questionnaires were returned. The data collected was subjected to both descriptive and inferential statistical analysis. The results of the analysis indicate that project completion at 'least or budgeted cost' is regarded as the most important issue of emphasis by consulting organizations while 'project meeting transparency and accountability' requirements is the most important to client organizations. The results further suggest that there are no significant differences, between client and consulting organizations, in the rankings of the six identified expectations on public sector project implementation. It is recommended that the homogeneity of perceptions by the two organizations can form the basis of intervention efforts for improvements in public sector project delivery. Furthermore, the results

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provide the stakeholders of public projects feedback on perceptions, which can be useful in planning for future public projects.

Keywords: Public project implementation, clients, consulting organizations

INTRODUCTION

Public infrastructure projects consume government revenue, provide infrastructure, alter and affect the environment and thus contribute to or detract from the enlightened self-interest of nations (Dada, 2007). The way public projects are executed is thus of paramount interest to the citizens of any nation. As a matter of fact, the way public projects are procured has the possibility of determining the popularity of a government and the future direction of the nation state. Petersen and Murphree (2004) assert that the public sector has both fiscal and moral responsibility to the citizenry. Public projects are executed within the larger context of the construction industry. Wells (1986) reported efforts of some developing nations to either nationalize their construction industry all in a bid to ensure that the industry contributes to their national development. Ogunlana (2010) reported that the Asian tigers have set goals and have linkages of their construction industry to their overall national developmental agenda. Some of these nations have construction industry development boards to provide leadership for stakeholders to stimulate sustainable growth and to enhance the industry's role in their country's economies. As such the construction sectors in some of those nations have made progress in exporting or internationalising their services. Ogunlana (2010) asserted that while many Asian construction companies are over-committed in China, India and the Middle East with construction projects, Nigeria's construction sector has not made or been positioned to make similar contributions. One of the indicative parameters of Nigeria's Vision 20:20 is 'adequate infrastructure services that support the full mobilization of all economic sectors' (Ogunlana 2010: 8). Nigeria has a broad vision of using infrastructure to drive other sectors of the economy (Concept, 2007). The Nigerian Federal Government introduced the due process, which culminated in the enactment of the Public Procurement Act in 2007. The BMPIU (2005) reported that a diagnostic study conducted into the state of Federal Government public procurement revealed that Nigeria may have lost several billions of naira partly due to inflation of contract

costs, lack of transparency and competence based competition as criteria for the award of public contracts. This development raises questions about the implementation of public projects in Nigeria: are there ingredients of integration, in project implementation, to specific deliverables with respect to national goals? Since infrastructure projects, whether public or private, are part of the outputs of the construction industry, the existence and/or use of intrinsic and extrinsic goals and parameters with which to execute and judge public projects in Nigeria by stakeholders remains debatable. The issue for investigation in this research is thus: in the realization and execution of public projects, how do some selected stakeholders -clients and consultants- prioritise their goals and expectations in project implementation? The rationale for this investigation is the important place that stakeholder management has in the ownership, implementation and success of projects and programmes (Yuan et al., 2010; Forrer et al., 2010; Li et al., 2012).

PRIORITIES IN PUBLIC PROJECTS AND STAKEHOLDER MANAGEMENT

The gross domestic product of nations especially developing ones that have to build up infrastructure shows the contribution of capital projects to national development (Ogunlana, 2010). For example building and civil engineering construction (in which public projects are included) in Nigeria was reported to have contributed as much as 3.4% to the gross domestic product of that nation (Federal Office of Statistics, 1998). Developing countries still have a large mass of infrastructure to provide for her citizens. Some of the infrastructure are provided for or enabled by the public sector depending on procurement form and arrangement. Whichever procurement method is used, underlying expectations exist.

Even though project priorities may differ from one client to the other, the priorities nonetheless exist (Greenberg, 1993; Peters and Hommers, 1997). Some nations have goals in the execution of their public projects. Public projects are a common trust and just as any other projects there should be parameters to measure their success. Literature position indicates some goals or strategies of some countries to integrate developmental agenda into their public project implementation. Some goals or measures of success on

a public project include but are not limited to (Wells, 1986; Masterman, 1992; Anyaegbunam, 2002; PPA, 2007; Park et al., 2012):

1. Project implementation at least or budgeted cost,
2. Project implementation at least or budgeted time
3. Project implementation to meet agreed or expected quality considerations
4. Transparency and accountability
5. Project implementation to promote technology transfer to nationals
6. Project implementation to generate employment opportunities for nationals
7. Project implementation in such a way as not to affect health and safety and the environment or ecosystem, or project implementation using the principle of sustainability
8. Poverty alleviation and other socio economic goals

The first three goals or objectives are traditional micro-measures of success or project performance and are sometimes called the iron triangle of cost, time and quality. Pinto and Slevin (1988) equally developed what he termed surrogate measures to determine project success, however some of these measures are limited to the project or are at the project level and are not intertwined with any political or national vision. For some public projects profitability may not be a top requirement. Park et al. (2012) explained that in some international development projects, which are examples of public projects, the target or driver of the project might not be profitability but poverty reduction. Forrer et al (2010) provided an analytical framework in which the use of public-private-partnership (PPP) for procurement of goods and services can meet public sector requirements of efficiency, effectiveness and equity. Forrer et al. (2010) also added accountability as a requirement in modeling the procurement of public projects.

The corruption proneness being reported or assessed by such organizations as Transparency International and other multilateral institutions is not just limited to the procurement of services but also the procurement of tangible infrastructure projects (Transparency International, 2010). Thus any attempt to improve the welfare of the citizens of a nation will involve efforts directed at executing their public projects efficiently and in line with their national goals and ethos. Logically, some of these measures can be regarded as critical success factors (CSFs) in public project implementation. CSFs can be process or project related and they can be at project or organizational or at both levels concurrently. The measures of the success or performance of public projects may then be local measures to the project or measures that go beyond the immediate. Knowing and keeping to CSFs will improve organizational performance (Russell, 2008).

Jefferies et al. (2002) agreed that Rockart and the Sloan School of Management developed the concept of CSFs. The concept of CSFs was first developed by Rockart (1979). Rockart (1979) saw CSFs as those areas 'in which, results if they are satisfactory, will ensure competitive performance for the organisation'. Yang et al. (2009), while quoting Seraph et al. (1989), views CSFs as 'those critical areas of managerial planning and action that must be practised in order to achieve effectiveness'. The implication is that CSFs are related to good outcomes for an organisation that will help organisational survival and performance. On the project level they are factors that enhance project performance. According to Russell (2008), an understanding of CSFs may assist business executives in improving their processes so as to reduce the cost of project failure. The concept of CSFs has been applied as a management measure in a number of sectors. Thus, there have been attempts to apply this same concept to construction management. The concept of the CSFs thus cuts across different fields of human endeavour (Yu et al., 2006; Omran et al., 2010; Ansarinejad et al., 2011) where process improvement is desired. According to Zhang (2005), the identification of CSFs will help in the efficient allocation of limited resources. CSFs can either be at the project level or the organisational level. Additionally, CSFs according to Yu et al (2006) can be used as a template and checklist for future projects. The goal of CSFs is to improve ultimately organisational or process performance. CSFs on projects have attracted the attention of researchers and practitioners. How are Nigeria's public projects assessed with respect to CSFs or deliverables or goals in project implementation?

Ogunlana (2006) says government especially in participative democracies is about people. Hence all activities of government even in project execution should be directed to protecting the common good of the citizens. This study thus investigates the perceptions of a critical sector among immediate project participants – client organizations and consulting organizations- regarding public project implementation. In the first instance, these two sets of organisations have experience of construction procurement. It is expected that the views of these organizations can shape the formulation and success of implementation of government public project procurement policies. It is also in the context of a previous finding that the failure of some past public projects had been due to the failure of the government in carrying along the host community in the project implementation (The Guardian., 2002). Stakeholder integration and management, which have been identified as necessary to the success of projects, have been lacking. Yet, the necessity of considering the perspective of different stakeholders in performance measurement of projects has been cannot be over-emphasised (El-Gohary, 2006; Yang et al., 2009; Yuan et al, 2010; Forrer et al., 2010; Li et al., 2012). It is in this context that the views and perceptions of client and consulting organizations on what they expected should be priorities in project implementation are located. Perceptions, whether right or wrong, have the possibility of influencing behaviour and determining customer patronage, choices and courses of action (Smith and Nagle, 1995; Dada and Oladokun, 2008). This research thus attempts to rank some of the expected deliverables in public projects and find out whether significant differences exist in the importance rating of those issues by both construction industry clients and consultants. The study should thus contribute to the body of knowledge on expectations of two of the key participant organisations in project delivery. An empirical assessment of their differences or otherwise on the issues will reveal the present state and assist logically in suggesting direction for improvement

METHODOLOGY

This research was conducted through the examination of relevant literature followed by field investigation. Literature was consulted on the micro or traditional measures of project success, which invariably become project goals. Macro measures that go beyond the traditional requirements of time, cost and quality considerations were equally investigated on public projects. The researcher used the three traditional micro measures of time, cost and quality and additional measures adopted from interviews, experience and intent of the Federal Government of Nigeria on some of her goals for public projects (Vision 20:20 Concept: 2007). The researcher's awareness of agitation by local oil communities for technology transfer and government's renewed emphasis on transparency in public projects were also used to obtain factors which respondents were expected to rank. The population for the research consisted of construction industry client and consultant organisations. The client organizations were either from the public or private sector. The public sector clients included ministries, departments or agencies at either the federal, state or local government levels. The consultant organizations were consultants in the built environment. A set of 155 questionnaires were administered through purposive and snowballing techniques on the construction industry clients and consulting organizations located in at least thirteen states of Nigeria. The questionnaires were administered through purposive and snowballing techniques. The use of these non-probabilistic methods was due to a lack of reliable and comprehensive database of the respondent organizations. The use of such methods has found application in construction or project management research, as it has been opined that in some instances such methods are the only practical way of getting data on a subject matter (Kidder, 1981; Li et al., 2005). 94 % of the respondent organisations that identified their locations were drawn from thirteen states of the federation and Abuja, the federal capital territory. Construction industry professionals in the respective organizations supplied the needed information on behalf of the organizations. The professionals were any of the following: architects, builders, engineers, town-planners, estate surveyors, quantity surveyors and land surveyors.

The questionnaire sought to know the professional affiliation of the respondents that were filling out the questionnaire on behalf of the respective

organizations. The questionnaire also sought to know the head office locations of the organizations, the professional affiliations of respondents with their grades of membership, their years of experience, the experience of their organization in construction commissioning, The questionnaire further asked them to rank in the order of importance their expected issues of emphasis in public sector project implementation. Rank '1' was the highest while '6' was the least among the six issues identified. The issues were: project completion at the least/budgeted cost, project completion at the least/budgeted time, project completion to agreed quality expectations, project completion enhancing transparency and accountability to the electorate, project implementation enhancing technology transfer to Nigerians and project implementation for prestige effect or status symbol. Respondents were also given opportunity to add to the issues for ranking if they had such issues. The level of significance for statistical testing was set at 5%.

ANALYSIS, RESULTS AND DISCUSSIONS

Lagos State houses the head offices of the highest number of the organizations (with a frequency of 46 which translated to 69.7%) for the opinion survey instrument. Ondo, Kwara, Kogi, Anambra, and Abia states and Abuja each houses 1(1.5%). Enugu state houses 4 (6%) respondent organizations and Oyo, Enugu and Ekiti states house 2 (3%) each of the projects. Head office locations showing states were not indicated by five respondents (7.6%). For the observation that Lagos State houses the head offices of the highest number of respondents, the possible explanation is that Lagos remains the commercial nerve centre of Nigeria. Lagos state used to house the capital city of the Federal Government of Nigeria until 1991 when the seat of Government was moved to Abuja. The nature of construction business where a building product does not necessarily have to be produced in the head office is another possible explanation. Construction products by their nature are immobile, but as far as location is concerned, they can be dispersed and scattered in different geographical locations. It therefore implies that the head office location of the project participants does not in reality signal a delimitation of their projects to such locations.

Descriptive Data Analysis and Results

Table 1 shows the response rate to the questionnaire.

Table 1: Response Rate to the Survey Instrument

Questionnaire	Number from client org.	% from client org.	Number from consultant org.	% from consultant org.	Total number from both org.	% of total number from both org.
Received	32	49	33	39	65	42
Not received	39	51	51	61	90	58
Total	71	100	84	100	155	100

Org. = organisation

Table 1 shows that the response rate by the client organizations to the questionnaire was 49% and that of the consultants' questionnaire was 39%. The aggregated response rate was 42%. Table 1 shows that the response rate by the client organizations to the questionnaire was 49% and that of the consultants' questionnaire was 39%. The aggregated response rate was 42%.

Table 2 shows the classification of respondent organizations used in the study.

Table 2: Organisational Classification of Respondents to the Survey Instrument

Group	Frequency	Percentage
Consultant	33	50.77
Client	32	49.23
Total	65	100

Consultant organizations represented 33 (50.77%) of respondents while client organizations were 32 (49.23%). Table 3 shows the professional affiliation of respondents that completed the questionnaire on behalf of their respective organizations.

Table 3: Professional Affiliations of Respondents

Professionals	NCL	PCL	NCS	PCS	NTOT	PTOT
Architect	3	9.40	7	21.20	10	15.40
Builder	12	37.50	3	9.10	15	23.04
Civil/structural engineers	6	18.80	6	18.20	12	18.46
Mechanical Engineers	2	6.30	2	6.10	4	6.15
Estate surveyors	3	9.40	7	21.20	10	15.40
Quantity surveyors	4	12.50	6	18.20	10	15.40
Dual or more professions	2	6.30	2	6.10	4	6.15
Total	32	100	33	100	65	100

NCL = Number of client organizations; PCL = % of client organizations; NCS = Number of consultant organizations; PCS = % of consultant organizations; NTOT = Total number in both organizations; PTOT = % of total number; HND = Higher National Diploma.

The second, fourth and sixth columns of Table 3 indicate the number of respondents while the third, fifth and seventh columns respectively indicate the associated percentages with respect to the total for that group. The table indicates that architects dominated the representatives of respondents that completed the supplied information for consultant organizations. For client organizations, civil/structural engineers dominated.

Table 4 shows the highest academic qualifications of construction industry professionals who completed the questionnaire on behalf of their organizations.

Table 4: Highest Academic Qualifications of Respondents

Qualification	NCL	PCL	NCS	PCS	NTOT	PTOT
Masters	6	18.70	8	24.20	14	21.5
Bachelors	18	56.30	11	33.30	29	44.60
HND	8	25.00	12	36.40	20	30.80
Not indicated	-	-	2	6.00	2	3.08
Total	32	100.00	33	100.00	65	100.00

NCL = Number of client organizations; PCL = % of client organizations; NCS = Number of consultant organizations; PCS = % of consultant organizations; NTOT = Total number in both organizations; PTOT = % of total number; HND = Higher National Diploma.

Table 4 indicates that Higher National Diploma holders - 12 (36.40%) - dominated the respondents representatives in the consultant group, while bachelor's degree holders dominated in the client group. 14 (21.50%) of individuals who stood for their respondent organisations had master's degree while 29 (44.60%) had the bachelor's degree. 20 (30.80%) had the higher national diploma qualification while 2 (3.08%) did not indicate their highest educational qualification. On the whole, bachelor's degree holders dominated respondents' representatives in the aggregated groupings. The insight that can be gained from the table is that not less than 96.10% of respondents have at least a degree or equivalent qualification. It can be argued that the strength of their understanding and responses could be better guaranteed.

Inferential Analysis and Results

Table 5 shows the analysis of the rankings of each of the expected issues of emphasis on public sector projects. The lower the computed mean rank from Mann Whitney-U analysis the higher the ranking assigned in the table, in order of importance. The aggregated ranks for the two groups on each item are also shown.

Table 5: Ranking by Respondents of Expected Issues of Emphasis in Public Projects

Issue or measure	Clients' MR	Clients' Rank	Consultants' MR	Consultants' rank	Aggregated MR	Aggregated rank
TRANACCO	30.81	1	35.12	6	32.97	1
EXPTIME	31.98	5	33.98	5	32.98	2
PRESTIGE	32.45	3	33.53	4	32.99	3
TECHTRAN	32.88	4	33.12	3	33.00	4
EXPQUAL	33.56	5	32.45	2	33.01	5
EXPCOST	36.31	6	29.79	1	33.05	6

MR = Computed mean rank from Mann Whitney-U analysis; EXPCOST = Expected cost; EXPTIME = expected time; EXPQUAL = Expected quality; TRANACCO = Transparency and accountability consideration; TECHTRAN= Technology transfer to Nigerians

Table 5 indicates that the mean sum of ranks for client organizations had a highest value of 35.12 and the least absolute value of 27.79. Equally,

mean sum of ranks for consultant organizations had a highest value of 36.31 and the least absolute value of 30.81. The first ranking is assigned to the issue with the least mean sum of ranks. The results further indicate that while consulting organizations ranked ‘project meeting expected cost or being completed at the least cost’ as the most important expectation in public sector projects, clients ranked this issue least. While consultants ranked ‘project meeting or exceeding quality expectations’ second, clients ranked it fifth. The least important to consulting organizations was ‘transparency and accountability to the electorate’.

Table 5 further reveals that client organizations rank issues in an inverse direction to consulting organizations. The aggregated ranking shows however that transparency and accountability requirements rank highest while cost expectations ranks least. However the differences in rankings of the two groups need to be statistically investigated.

The following null and alternative hypotheses were thus postulated:

Null Hypothesis (H_0): There is no significant difference between client and consultant organizations in their ranking of expected deliverables or priorities in public project implementation

Alternative Hypothesis (H_1): There is significant difference between client and consultant organizations in their ranking of expected deliverables or priorities in public project implementation

The testing of these hypotheses was done through the use of the Mann Whitney-U analysis. The Mann Whitney-U analysis is a non-parametric equivalent of the students-t test (Levin, 1987; Kinnear and Gray, 2000; Gupta, 2001). The analysis is suitable for use in this research. Two groups are being compared here and the scales used are ordinal. Table 6 shows the edited output of the results.

Table 6: Mann Whitney-U Analysis of Expected Issues of Emphasis by the Groups

Issue	MRCS	SRCS	MRCL	SRCL	U-value	Z-value	P-value	Sig.
TRANNACCO	35.12	1159.00	30.81	986.00	458	-0.944	0.345	NS
EXPTIME	33.98	1121.50	31.98	1023.50	493	-0.446	0.656	NS
PRESTIGE	33.53	1106.50	32.45	1038.5	510.50	-0.241	0.809	NS
TECHTRAN	33.12	1093.00	32.88	1052.00	524.00	-0.053	0.958	NS
EXPQUAL	32.45	1071.00	33.56	1074.00	510	-0.300	0.764	NS
EXPCOST	29.79	983.00	36.31	1162.00	422.00	-1.509	0.131	NS

RG = Respondent group; CS = consultant; CL = client; MR = mean rank; SOR = sum of ranks; Sig = significance; NS = not significant.

Table 6 shows the mean ranks and mean sum of ranks, the U-values, the Z values and the probability values for the issues used for Mann Whitney –U analysis. The Mann Whitney-U values can be approximated to Z values (Gupta, 2001). All the U and Z values in Table 6 indicate that the results are not significant. Alternatively the probability values (p-values) could be examined for decision making according to Asika (1991) and Kinnear and Gray (2000). In Table 6 all the p-values are less than the set level of statistical significance (5%). The decision is thus to accept the null hypothesis. It is thus concluded that there are no significant differences in rankings of the respective expected issues of emphasis in public project implementation.

Discussion

The results of the descriptive analysis of rankings done by respondents indicate that while consulting organizations ranked ‘project meeting expected cost or being completed at the least cost’ as the most important expectation in public sector projects, clients ranked the issue least. While consultants ranked ‘project meeting or exceeding quality expectations’ second, clients ranked it fifth. The least important to consulting organizations was ‘transparency and accountability to the electorate’. Client organizations seemed to be more conscious of transparency and accountability expectations on public projects while consulting organizations were more conscious of project completion at least or budgeted cost. This conveys the impression that it is not just the final cost at which a public project is executed that matters so much to client organizations rather that every amount spent on the

project could or should be accounted for. Table 2 further reveals that client organizations rank issues in an inverse direction to consulting organizations. This may thus imply that the business philosophy of the client may affect their ranking. This development may however warrant more examination in future works.

The inferential analysis indicates that the two groups -client and consulting organizations- agree on the issues. Their rankings and views statistically are not divergent but homogenous. Perhaps one possible rationalization for this development could be that the degree of interaction among clients and consultants starts right from the design level of the projects. Also, apart from professional fees charged by and paid to consultants, they see themselves as client's representatives. It may therefore not come as a surprise to see concurrence in their rankings of expected issues or deliverables in public project implementation. It may equally be rationalized that the greater the interaction between the two groups, the greater their understanding and ability to see through each other's eyes. Another possible reason is that consultants receive their brief from the clients, and as such consultants can get used to client expectations. This is an issue in stakeholder management and consensus building.

The outcome of this research is similar to the one conducted by Dada (2007) to examine the perceptions of consultants and clients' organisations on their expectations for public project implementation. Even though the present study focuses on client and consulting organizations' views on public projects, it is interesting that as in the results of Dada (2007) there are no significant differences in expectations of the two respondent groups on public projects. The policy implication of this research finding is that since the views of the two groups -clients and consultant organizations- are homogenous, intervention programs for the execution of public projects when hinged on the above areas of emphasis, should logically meet with minimal or no resistance. It should also be possible to evolve participative project implementation strategies to avoid the reasons adduced to have contributed to the failure of many public projects (The Guardian, 2002). The rankings or the issues are also possible measures on which the performance of public projects executed in the past can be gauged. The measures can be used in analysing the potential worth, contribution and utility of planned future projects. One limitation to the use of the results of this work however

is the extent of generalisability. This is because of the sampling method used. The results of the work are however useful and indicative and can lend direction to future research. In environments where data are collected using probabilistic means, the results can be subject to greater level of application and generalisability.

CONCLUSIONS AND RECOMMENDATIONS

The study set out to investigate the priorities attached to some success factors or deliverables in public sector project implementation. The perspectives of client and consulting organizations were investigated. The results indicate that while consulting organizations ranked ‘project meeting expected cost or being completed at the least/budgeted cost’ as the most important expectation in public sector projects, clients ranked this issue least. The most important issue to clients was ‘transparency and accountability to the electorate’; this was however the least important to consulting organizations. However there were no statistical significant differences in those rankings. It is recommended that all stakeholders in public sector project implementation should take advantage of homogeneity of expectations in evolving and implementing strategies for improvement and innovation in public sector project procurement. A research of this nature can be conducted in other developing countries that still have critical housing and infrastructure to provide their nationals.

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Innovation Crisis in Design Studios: Whom to Blame?

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ABSTRACT

Design is a social phenomenon and researchers suggest that communications and negotiations between designers are essential to initiate creativity. Within the design studio environment, the social interaction and design negotiations between students and tutors and with their mates is influenced by a number of factors that hinder students from fully utilizing it in the design scheme. Design studios' students from the third to fifth year at the College of Architecture, UoD were surveyed the influences on the production of innovative design projects. The research found a number of potential interrelated factors that would play a negative role in hindering student's creativity. However, to develop students' design/ innovative abilities, the researcher recommends that certain measures should be considered. These would include the use of innovative design precedents, development of students and tutors' communications skills, and transformation of the design studio into interactive and friendly learning environment that motivate students to produce innovative design projects.

Keywords: creativity, innovative projects, design negotiations, creative environment.

INTRODUCTION

Architecture studio's education involves a number of varied activities. Before the project begins, the tutor(s) establish the objectives, procedures, process, and assessment criteria he/ she will employ for the project. During each semester, tutors meet students either individually or in groups for design related discussions and clarifications. The design studio should not be considered as safe haven - as one would imagine- as conflicts regarding design ideas are very likely to take place between students and tutors and between tutors themselves. This research is driven by growing complains of the design studios' tutors from department of Architecture, College of Architecture, UoD about the low design abilities of students. Tutors from all academic levels repeatedly claim that students produce design projects but very few of them can actually produce innovative projects (the author 2009, personal contact 2009). Previous research points out possible causes that influence the education outcome thus innovation. It indicates that in many instances, the teacher serves as the "fount of knowledge" and the students are the empty, open containers anxiously awaiting knowledge to be poured in. Conversely, teachers may tend to be autocratic, repressive, and do little to encourage individuality creativity and many classrooms lack democracy, and students fear their teachers (Davis, Kogan& Soliman 1999). On the other hand, interactive and creative skills play an essential role in initiating/ fostering creativity (Casakin 2007, Johannessen et al 2011), thus, the absence or the shortage of these skills would diminish creativity. A number of approaches have been suggested to improve the design studio's teaching. Edmonds et al (1999), Fischer (2003), Mamykina (2002) and Shneiderman (2000) have put emphasis on collaboration and the social interaction/ dialogue to initiate creativity. Paker (2007) suggests that the role of the studio tutor is to create an organizational style in studio education and this would help in developing creative strategies in the design studio. This encourages educators to spark creative ideas, encourage follow-up of creative ideas, and evaluate and reward creative ideas (Sternberg& Lubart 1991). This research explores the social factors that would hinder/ support the production of innovative design projects. It examines how these factors interact within the design studio's environment to impact innovation.

Therefore, the objectives of the research were set as the following:

1. To find out communication routes and techniques that they use to get innovative ideas and feedback
2. To explore the social hindrances and drivers for innovation in the design studio; and
3. To make recommendations

In regards to the research objectives, a combination of quantitative and qualitative research methods was used. The use of mixed methods is because the findings that relate to each method will be used to complement one another and to enhance theoretical or substantive completeness (Morse 1991). One hundred and ninety four male students from College of Architecture and Planning, year 3, 4 &5 were targeted with a questionnaire that asks about tools, systems and conditions that help in producing innovative products. Forty eight replied back which constitute 25% from the total number of 3-5 year's students. Two software are used to analyse the quantitative data; SPSS 16 and AMOS. The following statistical tools were used to analyse the data: Mean calculation, percentage, and path co-efficient. Consecutively, nine students were interviewed. The target of the interviews is to validate the questionnaire survey results and clarify ambiguous points.

CREATIVITY AND THE DESIGN STUDIO

Creativity Definition

Creativity term is used to reflect a psychological view of creativity on a personal level in contrast to innovation as used in the world of business on an organizational level (Sternberg and Lubart 1999). Innovation traditionally focused on products and processes. Hargreaves (2000) suggests that '*you can have creativity without innovation, but you cannot have innovation without creativity*'. Warr (2007) examines the work of a number of researchers such as Ford & Harris (1992), Starko (1995), Eisenberger & Cameron (1998) and Sternberg (2001), and points out that there was no definite consensus regarding how creativity is defined. He finds out that the creative process

looks different to different researchers. There is general agreement among researchers that the act of creation does not occur as a fixed point in time, but that it is manifested as a process that extends through time, varying in duration (Ford & Harris 1992). Rogers (1995) defines an innovation as “an idea, practice, or object that is perceived as new by an individual or other unit of adoption”. Diffusion is “the process by which an innovation is communicated through certain channels over time among the members of a social system” (Rogers 1995).

Creative Design Projects

Mumford (2003) defines creativity as the production of novel, useful products. In the fields of art and literature, originality is considered to be a sufficient condition for creativity, unlike other fields where both originality and appropriateness are necessary (Amabile 1998, Sullivan and Harper 2009). So can we define creative architectural projects as the production of novel, useful, and original architectural projects. Such definition may look too general. Within the design studio context, the definition of creative architectural projects would be constrained/ featured by the goals/ objectives and prospected outcomes of the design studio course. Gero & Maher (1993) argue that ground breaking designs are those which possess innovative and creative qualities; and provide solutions that were previously unknown (innovative design) or subsequently produces entirely new products (creative design). To find out the features of creative design within the design studio context, a small survey was undertaken by the present researcher in 2009 on the design studio tutors and students to find out the importance of a number of design features in considering an architectural project as innovative. The survey showed the important aspects - arranged from more to less important, are as the following:

1. A creative functional solution
2. A solution that is in a harmony with the climate and Environment
3. A design solution that effectively address building users' needs
4. Successful response to the site parameters
5. Aesthetic treatment of Plans, elevations and form
6. A design solution that consider other design aspects such as user safety and security

7. A integration and harmony level between the 3D components of the form
8. Unique structural solution
9. A design solution with a high economic value

The tutors however, have set more emphasis on all design aspects than students and the difference in the importance weight between students and tutors is not always the same. This may cause possible conflict between students and tutors as each party has his views regarding the creativity weight of each design aspect. However, different outcomes would be resulted if the same survey is done on other colleges of Architecture around the world so what is considered as the most creative aspect here, would be/ not considered of the same creativity weight elsewhere.

Creativity and Architectural Design Pedagogy

One would suggest that the production of creative design projects is affected by the learning/ teaching styles. There are a number of teaching/ learning styles suggested by researchers (see for instance Riding 2002 and Kolb 2000) to initiate the exchange of knowledge between the student and the tutor. However, there is no uniform teaching pedagogy in higher education as there are substantial differences in the pedagogical language and theories used in higher education (Coffield et al 2004). Also, there is very little interaction between these differing approaches (the same source). Moreover, the architectural design pedagogy focuses more on form issues, while oversimplifying programmatic and contextual contexts within which buildings are created (Salamah 2005). This may suggest that the use of conflicting and unrelated teaching styles in the design studio and the incorrect focus of the design teaching would diminish creativity. Ostwald and Williams (2008a; 2008b) explore the relation between creativity and design education. They identify three key problems related to creativity and design education: firstly, there is a lack of understanding of the pedagogical dimensions of creativity in architecture and design; secondly, there is a lack of appropriate strategies to understand where different levels of creativity occur and how they should be assessed; and, thirdly, there is a lack of appropriate models or tools to support the assessment of the creative component of design. The student participants in the study argued that over-defined learning and assessment outcomes “stifles” their opportunities to be

creative and which teachers fail to recognise their creative efforts (Ostwald and Williams 2008a).

Creativity and the Design Process and Communications

The architectural design studio offers a prime example of a collaborative, multi-sensory, learner-centred, constructivist, experiential problem-based teaching environment (Kurt 2009). The education in the design studio stimulates its' characteristics from the nature and process of architectural design. The development of architectural project from the initial concept to the end product is an interactive social and psychological process. Through this process, the designer negotiates various solutions of the design problem with oneself and communicates ideas with colleagues and tutors. Gennari and Reddy (2000) describe the design process as, 'human activity, involving communication and creative thought among a group of participants'. The design process consists of a number of stages and these are suggested as: analysis, synthesis, appraisal and evaluation (Lawson 2006). These stages are linked with forward and backward loops. Lawson (2006) points out that the design process is a simultaneous learning about the nature of the problem and the range of the possible solutions. The designer repeatedly evaluates and alters the design scheme and would return back to the previous or to the start stage to find/ test a solution for the whole or a part of the design scheme. Lawson (2003) argues that experienced designers see some kind of underlying pattern or theme and made connections in a design situation (between design aspects) and also make a connection with some precedent in the episodic memory more than inexperienced designers. Expert designers acquire knowledge about solutions rather than necessarily about problems (Lawson 2003). This design approach style would initiate creativity as: "it is probably commonly accepted in design that creativity involves making use of solution ideas from apparently superficially different situations" (the same source). Casakin (2007) argues that designers should explore unfamiliar and unconventional design solutions. They need however creative skills that enable them to transcend conventional knowledge domain(s) so as to investigate new ideas and concepts which may lead to innovative solutions. It enables the designer to perceive a problem from unorthodox and innovative perspectives (Casakin, 2007). When conventions are challenged, design moves from routine solutions towards innovative, non-routine solutions. Though design activities encapsulate the spectrum

from routine to non-routine design, the ground breaking designs are those which possess innovative and creative qualities; that is, design that changes the design variables in such a way that the results are solutions that were previously unknown (innovative design) or design that introduces new variables and that subsequently produces entirely new products (creative design) (Gero & Maher 1993).

Innovative / Creative Conditions and the Design Studio Environment

Within the professional context, it is suggested that the cultural communication secures the exchange of experiences, the learning outcome and the innovation in the project and this is a function which is strongly de-emphasized in project contexts, both in the literature and in practice (see Ekstedt, Lundin, Söderholm & Wirdenius 1999). Social communication is meant to balance stability and change in order to promote dynamism, creativity and innovation (Johannessen et al 2011). Knowledge development in itself is crucial for innovation (Hamel 2006). Creative environments are generally described as organizations that enable the production of knowledge, facilitate learning from experience and from one other; thus provide knowledge sharing (Parkinson & Robertson 1999). Ekvall (1991) suggests that broad requirements for a creative climate include:

1. Open, participative culture (rather than suspicious, closed)
2. Having an idea-handling system
3. Whole workforce involved in idea generation
4. Whole organizational Endeavour (through pockets of innovation can emerge and survive)
5. Experiment-encorement
6. Forgiving culture, patience with failure, trust
7. Conflict-handling through debate and insight rather than warfare
8. Networking and sharing systems
9. System of incentives
10. Multidisciplinary working
11. Research and development investment and
12. Some champions (for any change but particularly for newer ideas)

Sternberg and Lubart (1991) observe that in order for creativity to exist, the environment needs to be supportive and rewarding of creative endeavours. The design studio's environment is unique and it is the core of architectural education. The design studio however assumes the mastery of the instructor and the student has to believe in the power of the instructor (Salama, 2005; Schon, 1980s). This is despite that design instructors are not clear about their studio goals or objectives and will change them from the beginning of the studio and during the assessment process (Seidel 1994). Furthermore, they tend to consider teaching practice to be an intuitive process based on subjective view points and personal feelings (Salama, 1995). The teaching and judgement of design creativity inevitably relies on the instructor's subjective understanding of creativity. This, in turn, may potentially diminish transparency and consistency in teaching and assessment practices, and students may find themselves confused as to the requirements of their creative tasks (Williams et al 2010). Eventually, current studio culture rewards students with the best looking projects (AIAS 2003, see also table 1). The teacher should show appreciation and approval of the students courage. Moreover, the teacher must encourage students to integrate production with perception and reflection, to engage in self-assessment and to be open to feedback from teachers and peers (Williams et al 2010). The literature review has very briefly highlighted the complexity of the creative design process, communications and environment. Also, it illustrates the impact of social factors on the exchange of knowledge and development of creative abilities of students. This research tests this possible impact of social factors within the context of design studios of college of Architecture, University of Dammam. The field survey aim is to find out the most important factors and how they are interlinked and influence innovation in the design studio.

Table 1: Potential Hindrances to Creativity

Context	Design pedagogy	Design instructors & design studio culture
<p>Design studio environment</p>	<p>The architectural design pedagogy focuses more on form issues, while oversimplifying programmatic and contextual contexts within which buildings are created (Salamah, 2005)</p> <p>There is a lack of:</p> <ul style="list-style-type: none"> a. understanding of the pedagogical dimensions of creativity in architecture and design; b. appropriate strategies to understand where different levels of creativity occur and how they should be assessed; and c. appropriate models or tools to support the assessment of the creative component of design (Ostwald and Williams 2008a; 2008b). <p>Over-defined learning and assessment outcomes “stifles” the students’ opportunities to be creative and that teachers fail to recognise their creative efforts (Ostwald and Williams, 2008a).</p>	<p>Design instructors are not clear about their studio goals or objectives and will change them from the beginning of the studio and during the assessment process (Seidel, 1994)</p> <p>Instructors tend to consider teaching practice to be an intuitive process based on subjective view points and personal feelings (Salama, 1995)</p> <p>The teaching and judgement of design creativity inevitably relies on the instructor’s subjective understanding of creativity. This, in turn, may potentially diminish transparency and consistency in teaching and assessment practices, and students may find themselves confused as to the requirements of their creative tasks (Williams et al 2010)</p> <p>The design studio assumption of the mastery of the instructor thus the student has to believe in the power of the instructor (Schon, 1980s)</p> <p>Current studio culture rewards students with the best looking projects (AIAS, 2003)</p>

THE FIELD SURVEY RESULTS

The Questionnaire's Survey Results

Respondents considered the following information resources as most useful resources that help in producing innovative projects and these are ranked according to their usefulness (from more to less useful): tutor's feedback and advice; discussions with your colleagues from the same year; and the projects of higher year student's. Whereas they said that the following information resources are the least useful: projects of the same year students; and the hard copy and electronic references of the University library. The most frequent activities and communications of students that happen in the design studio during the term time are the followings:

1. The generation of many sketches before making up mind while working on a design problem
2. Doing interactive and useful dialogue with tutors on how to reach to a creative design solution
3. Capturing innovative ideas of colleagues of the higher academic level from other departments
4. Not taking many risks because of the fear of failure

Whereas the least frequent activities and communications of students are:

1. Seeking the students and staff from different departments to help in solving specific design problems
2. Capturing innovative ideas of the same academic year colleagues from different departments
3. Capturing innovative ideas from other departments' tutors

It seems that the design studio is governed mainly by two types of activities/ behaviours (see table 2). One of these seems positive which is the student’s frequent use and integration of different communications activities and techniques to initiate creativity and innovation and the other seems negative which is the tutor dominance on the design process. Students said that tutors mostly encourage them to: do many trails to develop the design solution, follow various design approaches to reach to an innovative solution, and to present a creative design solution. However, around one third of students said that strategies to motivate and initiate innovation are rarely applied in design studio and conflicts are hardly handled through constructive dialogue. The most frequent support that students get from the tutors is regarding the following cumbersome situations (arranged from more to less): the attempt to change the whole design solution during the design process, confusion over the nature and context of the design process, the attempt to change the approach to a design solution during the design process and misunderstanding of some project requirements. The least frequent support that students get from the tutors is regarding the following cumbersome situations: little knowledge of students regarding one of the design aspects and misapplication of one of the design requirements.

Table 2: The Frequency of Activities and Communications that Happen in the Design Studio during the Term Time (scale: 0 does not happen, 4 always happen)

Criteria	Type of communications and activities within the design studio	Mean value
Design studio environment	The tutor’s ideas have the greatest weight on the design process	3.5
	We always use and integrate different tools to initiate creativity and innovation (e.g. brainstorming, group work, etc.)	2.77
	The design studio environment is govern with an open, participative culture	2.6
	The design studio environment is govern with forgiving culture, patient with failure and trustful	2.6

Instructors	My tutors encourage me to do many trails to develop the design solution	3.29
	My tutors encourage me to follow various approaches to reach to an innovative solution	3.16
	I am praised and rewarded when I present a creative design solution	3.10
	My tutors work on developing my innovative ideas	3.04
	My tutors give me the complete freedom to do innovations	3
	Strategies to motivate and initiate innovation are applied in design studio	2.89
	The tutors successfully handle conflict through constructive dialogue	2.875

The Co-efficient Path Results

Only co-efficient path relations that have significance value (i.e.<0.05) are reported here. The co-efficient path results show that when the frequency of tutor’s support regarding some cumbersome design situations of the tutor increases, the student’s performance (represented by the final grade) of the student improves. The results show that when the instructors encourage the student to follow various approaches to reach to an innovative solution more frequently, the student would be more able to proceed from one design stage to another smoothly and to make radical changes to the design solution. Also, when students do more interactive dialogue with their instructors on how to reach to a creative design solution and attempt to capture innovative ideas from colleagues in the same and higher academic level, they would be more able to: quickly understand the design problem, do quick analysis of the design problem, set quick conceptual design solution and to do fast appraisal of a design solution and their grades. Students who seek students and staff’s help and capture innovative ideas of colleagues of the same academic level from different departments more frequently, would be more able to make radical changes to a design solution. Eventually, when design studio environment is govern with forgiving culture, patient with failure and trustful more frequently, the student would be able more to do quick analysis of the design problem, fast appraisal of a design solution, and proceed from one design stage to another design stage smoothly. On the other hand, the co-efficient path results revealed some odd results.

For example, more frequent support of the tutor regarding the student's uncertainty about a design aspect and misapplication of a design concept affects negatively the student ability to do fast appraisal of a design solution thus his design grades. Further investigation was undertaken to clarify the questionnaire results.

The Interviews Results

The interviews showed that communications and social interaction problems exist on a number of fronts i.e. the tutor, the student and the design studio environment.

The student: One student mentioned that the design process requires extensive knowledge of certain types of design information and if the student does not have this knowledge, he cannot produce good design scheme. Another student said that some students do not like to radically change the design concept unless the tutor asks to do so. On the other hand, some students have low design abilities; they are stubborn and unwilling to change the design scheme even if the tutor has asked them to do so. The tutor would spend considerable time and effort with these students without any progress, thus got depressed and start trying to enforce the student to follow certain design scheme. On the other hand, some students do not trust the design abilities of their tutors! One student said: "I take the alterations to my design scheme that is suggested by one tutor to another so I would find out what is the opinion of the other tutor about these alterations, thus try to co-ordinate between their opinions". Some students –even in the final year- have a communication problem with the tutors. They do not know how to communicate with them and how to discuss design issues with them.

The tutor: Students complained about the following aspects that are related to the teaching methodology and tutors' behaviour. The study found the following issues that are related to tutors:

1. *Support amount, type, timing and clarity:* Guidance at the start of the project development is very important. A student said that intensive guidance is mostly needed at the initial stages of design. However, the guidance is sometimes not clear as some design parameters are missing. This is because of some tutors who do not explain it in the

right way, or they do not even mention it. Some tutors guide his students to a certain way of developing the design scheme, but they describe it in a way that students do not get the message and do not know what their tutors aim to reach. During the design negotiations, some tutors do not clarify what is the nature of the design problem, and where to start to sort it out. They ask students to explore various approaches without giving sufficient guidance of where and what to explore. The student continues: “*the problem is that the tutor would ask us to change the design concept without giving a convincing reason or point out exactly where the problem exists*”. Some tutors give unclear critiques to the design scheme and demand radical changes. One student says: “*tutors might say develop any design scheme and we will help you to develop it further. At the end, you discover that you return to square one as you bring a complicated design scheme that they cannot comprehend and this gives them an opportunity to reject it or to heavily criticize it*”. During the design process, tutors – sometimes- provide support on an inappropriate time i.e. too late or too early, thus it affects the project’s quality, the student psychological condition and his final grade. Another student mentioned that the tutor should start from where the student has already designed and he should not impose his own ideas. Tutors should show some design precedents to students and explain about various negative and positive aspects of the project’s design. Thus students would have background on how professional architects deal with each design problem and how they sort it out. Tutors should develop awareness of the student’s abilities (i.e. weakness and strengths) thus provide support that is tailored to each student’s ability. They should motivate and encourage students and this can be in kind of praises, bonuses and incentives.

2. *The tutor’s performance and way of communications with students:* A student said that the atmosphere of the design studio is friendly – in general- but some tutors occasionally intimidate students. This would affect badly the student’s attitude and quality of work. In some instances, some tutors do not like the initial design concept and they accuse the student that he does not want to learn. The style of instruction is sometimes humiliating and aggressive as some tutors make fun of the student. In regard to communications, some tutors are less able and slower to communicate with students. The matter is not

about the communication frequency but about communicating ideas and one student claimed that the tutor's imagination of the design outcome differs from that of the student. So one may reach the end of the semester and the tutor would say suddenly to him that he has a bad design scheme. One student said that a tutor may suggest an idea to the student who is unable to develop it. The student may interpret the tutor suggestion in a wrong way thus apply it wrongly.

3. *Level of flexibility of the tutor's thinking:* Some tutors do not have flexibility of thinking. It is hard to convince them of a design solution as they see that it does not comply with their thinking and approach to sort out the problem. Thus they are unwilling to help the student. They would rather ask the student to change the design scheme to something that they are willing to negotiate. Some tutors are also unable to discover the innovative aspects in the student's design. They insist on their own ideas and when a student represents his ideas to them, they hesitate to accept it. The interviews revealed that students follow their tutor's opinion not because it is convincing and rational but as the tutor has a good chunk of the total grade.
4. *The tutor's commitment and knowledge:* Some tutors are committed and helpful whereas others are not. There is support during the start and the end of the project whereas it is not stable and changeable at the middle of the project. In regards to the level of design knowledge, some tutors do not know –for example- how to apply sustainability in a practical way into the design scheme.

The design studio's environment: The design studio's environment has its' problems and students claim:

1. *The lack of democracy at the design studio and college level:* Students do not feel that they are an integral part of the college as they are not allowed to participate in the college's making decisions. This reflects badly on the student's psychology and his relation with the college's staff. The students claimed that the design studio is governed and restricted with unwritten conditions and laws that hinder innovation. One student said that he feels that the College is segregated. He continued: "*we do not know what each tutor teaches. Also we do not*

know which department other students belong to, and their academic strength areas that we can utilize”.

2. *Lack of support from colleagues, other departments’ tutors and students:* The communications and discussions within the design studio help in developing the design scheme. Some students stay and work at the College even during the night. There is daily communications. A fifth year student said: *“when I do a design scheme, I show it to another colleague who give me his feedback. This also happens to me as students from second and third year come to me and get advice. Even if the student did not follow what has been discussed, he would utilize from the methodology and the way of thinking and how to make judgments etc.”* The communications with other tutors and students is good as a student commented: *“the higher year students would give you advice and show you another approach or easier way to sort out design problems”*. However, there is weak and infrequent communications with other departments’ tutors and students.

DISCUSSION

This study -supported by the previous research- shows that the social settings of the design studio play an important role in the life of architectural students and influence their creativity. The field survey highlights the potential factors that would affect innovation in design studios. These can be categorized into initiation and constraints factors. The study unfortunately found few positive factors. It revealed that students usually seek advice and they benefit from the communications with their tutors, other design studio tutors and higher year students as they learn new ways of thinking, approaches to the design and sorting out design problems. On the other hand, some students work hard, this mostly though does not lead to any fruitful and innovative design outcome because of a number of negative influences, these are:

Design Resources

1. The library’s references are considered to be the least useful resources and this would negatively affect the student’s ability to obtain design examples thus produce innovative projects; and

2. Despite design precedents are necessary though they are useless without proper analysis of their negative/ positive features and innovative aspects

The Student's Knowledge, Communication Skills and Attitude

1. Students have little knowledge on how to design some architectural aspects of a project
2. Some students are unwilling to collaborate with their tutors and have little trust of the tutor's design abilities
3. Some students have Communication problems with their tutors as they do not know how to communicate with them
4. During development of the design scheme, it appears that each party i.e. the tutor and the student have different imagination/ idea of what the final/ possible design solution/ outcome would be; and
5. Students communicate frequently with their design instructors and with colleagues of the same department whereas some of them communicate infrequently with the tutors and students from other departments.

The Tutor's Attitude, Knowledge and Teaching Style

1. Tutors have their own views about the importance of various creativity aspects and these are different to the students' views;
2. Ambiguous instructions and guidance to the design of the project are given to students;
3. Some design parameters are explained in a vague way or being forgotten or neglected;
4. Some tutors have misunderstanding/misinterpretation of complicated design schemes that is done by students;

5. Support is not provided to students at the right time thus it was considered to be useless;
6. Some tutors do not have the capability to perceive the creative design abilities of students i.e. the weakness and strength. Thus they are incapable to provide support that is tailored to student abilities;
7. Some tutors seem that they humiliate students;
8. Some Tutors insist on their own design ideas so they are unwilling or hesitant to appreciate/ accept the student ideas; and
9. No strategies were set on how to apply the creativity dimensions in the design project

The Design Studio Environment

Low level of democracy is practised at the college and University level and students do not feel that they belong to the college. Accordingly, students complained from the dominancy of some design studio's tutors.

CONCLUSION

To improve the design studio environment and help students to produce creative projects, the study recommends that corrective measures should be undertaken on the following fronts:

Design Resources

Innovative design precedents are important and should be made available to students as it would remind students of possible design solutions thus students would use and experiment how to link it to design problems. These include case studies that have potential partial or complete creative design solutions for architectural, technical, structural etc aspects of building design. Students should keep a record of the design negotiations as this would help to track the progress of the design, explore new links and experiment these links with the design problem.

The Students' Knowledge, Communication Skills and Attitude

Students should frequently communicate design ideas with colleagues and tutors as this would substantially improve their design abilities. Students should be open minded and think outside of the box, have flexible attitude and negotiate design ideas. This may help them to find new design variables and that subsequently produces entirely new products in a similar way that expert designers do (see Gero & Maher 1993).

The Tutors' Attitude, Knowledge and Teaching Style

Clear instructions and objectives should be set at the start of the course though these should be linked to the creativity dimensions. However, such linkage requires deeper understanding of creativity in architecture and design and how to assess it. Tutors should be sensitive to the needs' signals of students so they provide their support at the right time to them. Tutors should define the creativity criteria for the given project. They should set clear roadmap of how to apply it in the design project. Thus they need to discuss it with students to reach to common understanding and application of the creativity dimensions in the design project. Shared understanding between tutors and jurors is required. Students should be taught how to look for innovative architecture solutions (Gero & Maher 1993), explore the innovative aspects of each case study, experiment possible links between innovative design aspects/ solutions and each dimension of the design problem similarly to what expert designers usually do (Lawson 2003). Also, they should experiment possible links with the ideas that they obtained from the design negotiations. Students should be encouraged to frequently communicate with their tutors and other students and explore the potentiality of various design solutions. The architectural design pedagogy or assessment should not focus on form issues as it does nowadays at the college of architecture, UD or elsewhere (see also Salamah 2005, AIAS 2003). It should rather focus on how to achieve the creativity dimensions in the design projects. Tutors should not impose their own ideas on students but introduce to students and encourage students to explore how it can be integrated with the students' design ideas. Training courses for tutors and students regarding the improvement of communications' and interactive skills and how to perceive students' creative abilities and needs are required (see Lindström 2006).

The Design Studio Environment

The college should set and apply professional conduct mechanisms that regulate the relation between the tutor and student and provide democratic environment that is necessary for initiating innovation (see for instance Ekvall 1991). The future research should explore the application of creativity dimensions in design projects at different levels of the architectural education and how this can be achieved. In regards to the design process and innovation, it would be useful to find out how to devise the design process/ decision making process to initiate innovation. Some troubled social issues surrounding the student's relation with the tutor, such as the mistrust, misinterpretations and misunderstanding should be explored further.

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Construction Performance Guarantee: Performance Bond

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ABSTRACT

Nowadays in the construction industry, the problems of non-performance by the contractor have become a common thing faced by the client. This problems usually happens the contractor failed to execute the according the contract. It has been a common issue in Malaysia when dealing with contractor's non-performance. Thus the client needs a protection in the event when the Contractor fails or defaults in its performance under the contract, such as abandonment or the works is of proof or any defects in the work appearing during the defects liability period. Contractor's performance guarantee is the feature or a management tool to handle the risk of non-performance by the contractor. Performance bond are introduced to ensure that contractor will honour and perform the contractor diligently. If the contractor failed to execute the work within the specification of the contract or the contractor abandoned the work, the performance bond can be used towards the disbursement of expenses incurred by the employer in rectifying the defect. Performance bond is three party agreement between the employer, contractor and a third party (usually a bank or insurance company), who agrees to pay sum of money to the employer, the event of default by the contractor in the construction contract. If the contractor has performed in the contract or in the words, has carried out the work within the contract, the client needs to release back the performance bond.

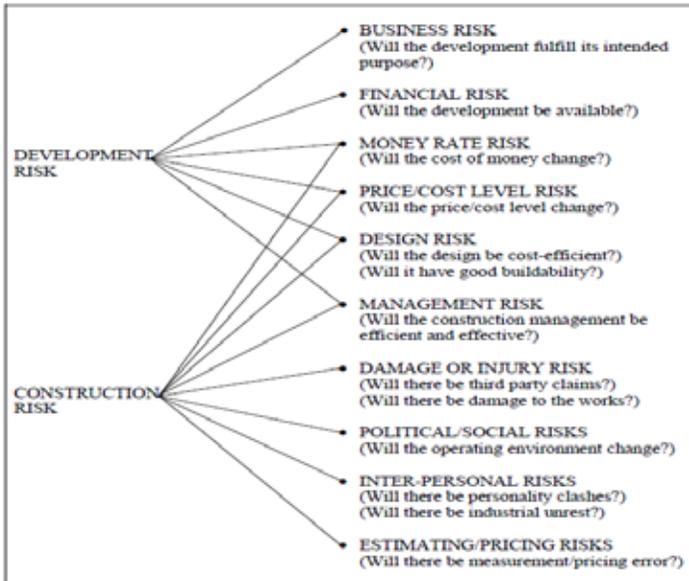
Keywords: Performance Bond, non-performance, contractor, construction, Malaysia.

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INTRODUCTION

In the context of construction industry, many of us would acknowledge that the success of a construction projects are often attributed to those that able to meet the client’s requirement and project objectives that has been determined during the initial stage of the project. Such objectives are completion on time, construct within the budget allocated, and achieve require and standard of quality. Other objectives may include meeting functional requirements of the clients and/or end users. Notwithstanding such as requirements and objectives, the construction industries still suffer from numerous setback and problem (Ong Hock Teng, 2007). It also involved invariably list: (Radhakrihnan,1999) that is to say that the construction industry is a highly risky business, where level of risk is considered much higher than in other types of economic activities (Rashid, 2004). Figure 1.1 shows that the risk spectrum which identifies some principle sources of risk. Furthermore, projects involve commercial risks and they involve people (Murdoch & Hughes, 2000).



Source: (Robinson et. al.,1996)

Figure 1: The Risk Spectrum: Some Principle Sources of Risk

There are many types of risk in construction contract. Usually risk that involves in the construction contracts are risk that cannot begin avoided. The following examples summarize many of the risks. Some of them are contractor's risks (for example: workmanship, materials, etc.) (Murdoch & Hughes, 2000).

1. Physical works – ground conditions; artificial obstructions; defective materials or workmanship; tests and samples; weather; site preparation; inadequacy of staff, labour, plant, materials, time or finance.
2. Delay and disputes – possession of site; late supply of information; inefficient execution of work; delay outside both parties' control; layout disputes.
3. Direction and supervision – greed; incompetence; inefficiency unreasonableness; partiality; poor communication; mistakes in documents; defective designs; compliance with requirements; unclear requirements; inappropriate consultants or contractors; changes in requirements.
4. Damage and injury to persons and property – negligence or breach of warranty; uninsurable matters; accidents; uninsurable risks; consequential losses; exclusions, gaps and time limits in insurance cover.
5. External factors – government policy on taxes, labour, safety or other laws; planning approvals; financial constraints; energy or pay restraints; cost of war or civil commotion; malicious damage; intimidation; industrial disputes.
6. Payment – delay in settling claims and certifying; delay in payment; legal limits on recovery of interest; insolvency; funding constraints; shortcomings in the measure and value process; exchange rates; inflation.
7. Law and arbitration – delay in resolving disputes; injustice; uncertainty due to lack of records or ambiguity of contract; cost of obtaining decision; enforcing decisions; changes in statutes; new interpretations of common law.

In the context, the public infrastructure work in Malaysia, one major risk to the Government is non-performance of construction contracts by the contractors. Performance bond is illegal and management instrument used by the employers to manage risk with respect to contractor's non-performance.

LITERATURE REVIEW

Definition

Performance bond is a bond giving security for carrying out of a contract, where a bond is a deed by which one person (the obligator) commits himself to another (the obligee) to do something or refrain from doing something (Martin, 2003). In the context of construction contracts, the contractor commonly required to furnish performance bond for due performance of the work. Performance bond usually takes the form of an 'on-demand' and irrevocable banker's guarantee. The value of performance bond typically required by employers in Malaysia is 5% to 10% of the contract price (Pathmavathy and Nayagam, Skrine & Co., 2007).

Nature of Performance Bond

A bond or guarantee is an arrangement under which the performance of a contractual duty owed by one person (A) to another (B) is backed up by a third party (C).

What happens is that C promises to pay B a sum of money if A fails to fulfil the relevant duty. In this context A is commonly known as the principal debtor or simply principal; B is called the beneficiary; and C is called the bondsman, surety or guarantor (Murdoch & Hughes, 2000).

In a construction contract, performance bond is also a three-party instrument between bondsman, the employer and the contractor. The agreement, however, binds the contractor to comply with the terms of a contract. If the contractor fails to perform the contract, the bondsman assumes the responsibility to indemnify the employer up to the maximum amount of the bond. The Bondsman's obligation to pay is now arises when called upon to do so by the employer.

The obligation to pay is, however, independent of the underlying contract. This is due to the fact that the performance bond is like a letter of credit and designed to release ‘no quibble’ cash to the beneficiary in the event the call on the bond.

Purpose of Performance Bond

The purpose of a bond is therefore to provide the employer with some financial security in the form of a cash payable by the bank for the contractor’s failure to perform his obligation under the construction contract.

Performance Bond in Construction Contract

Whether or not a contractor is required to provide performance bond depends on the terms of the contract. In Malaysia, as in Clause 38(i) of the *P.W.D. Form203A (Rev. 10/83) Standard Form of Contract to be Used Where Bills of Quantities Form Part of the Contract* states that the Contractor shall either deposit with the Government a performance bond in cash or alternatively by way of a Treasury’s Deposit or Banker’s Draft or approved Banker’s or Insurance Guarantee equal to 5% of the Contract Sum as a condition precedent to the commencement of work. In other words, the Contractor is not permitted to carry out any work under the Contract unless and until the performance bond is given. The failure of the Contractor to give the performance bond may amount to a fundamental breach of contract entitling the Government to discharge the Contract and sue the Contractor for damages accordingly (Lim Chong Fong, 2004). However, it is not the only places where performance bond is mentioned.

Under Clause 10 of the Conditions of Tendering in the Form of Tender (PWD203B Rev. 1/82) states the following:

“The successful tenderer ... shall so soon as it practicable but before the commencement of the Works deposit with the Superintending Officer ... Performance Bond amounting to 5% of the Contract Sum...”

It is also unusual for private projects to require the contract to provide performance bond. Performance Bond, however, is the precondition for:

1. *Taking possession of site*

By Clause 38(a) of the *P.W.D. Form 203A (Rev. 10/83) Standard Form of Contract to be Used Where Bills of Quantities Form Part of the Contract* it is made clear that even if possession of the Site has been given, the Contractor cannot commence work unless and until the performance bond and the insurance policies required under the Contract have been deposited with the Government or the Superintending Officer. Thus if the Contractor delays in depositing the performance bond or insurance, he does so at his own peril as the time available for the execution of the Works under the Contract would be ticking away (Lim Chong Fong, 2004).

2. *Advance payment*

The advance payment is paid to the Contractor upon application from him together with a bank or insurance guarantee for the amount of advance to be paid, and provided that he has returned the Letter of Acceptance duly signed and witnessed, and submitted the Performance Bond and the requisite insurance policies required by the Contract (JKR, 1998)

3. *First interim payment*

It is further provided that, other than for the first Interim Certificate, the Superintending Officer need not issue further Interim Certificates unless and until the Contractor has returned to the Government the Letter of Acceptance of Tender duly signed by the Contractor, and has deposited with him or the Government the insurance policies and performance bond required under clauses 33, 34, 36 and 37 of these Conditions in the *P.W.D. Form 203A (Rev. 10/83) Standard Form of Contract to be Used Where Bills of Quantities Form Part of the Contract respectively* (Lim Chong Fong, 2004).

Types of Performance Bond

There are two types of performance bond: conditional and unconditional or on demand. Mohamed Dzaiddin FCJ in delivering the grounds of judgment of the court in *China Airlines Ltd v Maltran Air Corp Sdn Bhd (formerly known as Maltran Air Services Corp Sdn Bhd) and Another Appeal* [1996] 37 (Malayan Law Journal, 1996) reveal this by saying:

“A bank guarantee is a performance bond. There are two types of performance bond. The first type is a conditional bond whereby the guarantor becomes liable upon proof of a breach of the terms of the principal contract by the principal and the beneficiary sustaining loss as a result of such breach. The guarantor’s liability will therefore arise as a result of the principal’s default. The second type is an unconditional or ‘on demand’ performance bond which is so drafted that the guarantor will become liable merely when demand is made upon him by the beneficiary with no necessity for the beneficiary to prove any default by the principal in performance of the principal contract.”

There are two types of performance bonds, as set out below (Robinson et. al. 1996)

1. *Conditional bond or default bond* - A default bond is a contract of guarantee whereby the surety accepts ‘joint and several’ responsibility for the performance of the contractor’s obligations under the building contract: the contractor remains primarily liable for his performance and not protected by the bond.
2. *Unconditional bond or on-demand bond* - An on-demand bond is a covenant by the surety (usually a bank) to indemnify the employer following contractor’s default, subject to stated terms and up to a sum commonly between 10 and 20% of the main contract sum. The contractor is not a party to this arrangement.

Construction of Performance Bond

To ensure the contractor furnishes the performance bond to the employer:

1. The contract may stipulate the provision of performance bond as a condition precedent to commencement of works and payments by the employer
2. The contract may entitle the employer to terminate the contractor's engagement in the event the contractor fails to furnish the performance bond within requisite period.

The contractor may entitle the employer to withhold monies which may become due to the contractor under the contract in the event the contractor fails to furnish the requisite performance bond (Pathmavathy et. al., 2007).

METHODOLOGY

Performance bond has been one of the causes of many disputes between client and contractor. The common problem has always been whether performance bond in the construction contract is a conditional or unconditional bond. In this case studies, various issues that arise affecting the performance bond is highlighted and discussed. After knowing the issues faced by the parties involved in the event of performance bond, the analysis on legal position for each issue is determined so that the parties involved has knowledge about the legal issue arise.

RESULTS AND DISCUSSIONS

By using the words 'Performance Bond', 67 cases for the past 20 years were downloaded from the Malayan Law Journal to be analysed further. From the first reading and screening of the above cases, the judge of 25 cases did interpret the distinction between 'conditional' and 'unconditional' Performance Bond. Further screening was done from the 25 cases whereby only cases which the judge discussed on the wordings or phrase(s) of the Performance Bond will be further analysed. From this, 15 cases were

identified to be further consumed as follows and 1 case to be detailed out for each unconditional and conditional performance bond:

1. Law Cases No 1

In *Suharta Development Sdn Bhd v United Overseas Bank (M) Bhd&Anor* [2005], Abdul Wahab Said Ahmad JC stated that:

*In LEC Contractors (M) Sdn Bhd Mokhtar Sidin JCA distinguished the case of **Teknik Cekap** and at p. 358 said:*

That is the position of an on demand performance bond...

*From the wordings of the guarantee it is clear to us that it is 'on demand' performance bond as stated in **Esso Petroleum Malaysia Inc v Kago Petroleum Sdn Bhd**: 'All that was required to trigger them was a demand in writing'; or in the words of Mohamed Dzaidin FCJ in the case of **China Airlines Ltd v Maltran Air Corp Sdn Bhd**: 'the guarantor will become liable merely when demand is made upon the beneficiary with no necessity for the beneficiary to prove any default by the principal in performance of the principal contract'. The appellant claimed that the bank guarantee is a conditional bond. To support this contention learned counsel for the appellant referred to the case of **Teknik Cekap**, a decision of this court where the court held that a performance bond was a conditional bond. It was held by the court that because the bond began the words: '**If the subcontractor ... shall in any respect fail to execute the contract or commit any breach of his obligations there under then the guarantor shall pay**'. Apparently this is the case in Malaysia where similar wordings has been used where the court has held that it was a conditional bond. In our view the court in the case of **Teknik Cekap** decided it on its own facts. Apparently one of the factors that influenced the court and the court below was the fact that the demand made was band in law. This is our view distinguished that case from the present appeal.*

The judge followed *LEC Contractors (M) Sdn Bhd* and hold this guarantee is an unconditional on demand guarantee.

2. Law Cases No 2

In *Teknik Cekap Sdn Bhd v Public Bank Bhd* [1995]66, Shaik Daud JCA stated that:

It is, therefore, pertinent to set out the relevant clause of the bond which has caused this concern in this case. It can be found on the first page of the bond dated 1 June 1992 issued by PBB and is as follows:

If the sub-contractor (unless relieved from the performance of any clause of the contract or by statute or by the decision of a tribunal of competent jurisdiction) shall in any respect fail to execute the contract or commit any breach of his obligations thereunder then the guarantor shall pay to the contractor up to and not exceeding the sum of RM422,000 (Malaysian Ringgit four hundred twenty two thousand) only representing 10% of the contract value or such part thereof on the contractor's demand notwithstanding any contestation or protest by the sub-contractor or by the guarantor or by any other third party, provided always that the total of all partial demands so made shall not exceed the sum of RM422,000 (Malaysian Ringgit four hundred twenty two thousand) only and that the guarantor's liability to pay the contractor as aforesaid shall correspondingly be reduced proportionate to any partial demand having been made as aforesaid.

*It involves a straightforward exercise of construction, or interpretation, of the bond to discover the intention of the parties'. This is the unanimous view expressed in **IE Contractors Ltd v Lloyds Bank plc and Rafidain Bank** (1990) 51 BLR 1.*

*Much of the confusion and problems in interpreting performance bonds arose with the celebrated decision of the English Court of Appeal in **Edward Owen Engineering Ltd v Barclays Bank International Ltd & Anor** [1978] 1 All ER976; [1977] 3 WLR 764 . In that case, Lord Denning MR having pointed out that performance bond was similar to a letter of credit added that performance bonds are virtually promissory notes payable on demand. Since then it has been seen that performance bonds are, however, not on the same footing as*

letters of credit, they do not form part of the financial transactions supporting the performance of a contract. They are in fact collateral and subsidiary to a contract. In **IE Contractors Ltd v Lloyds Bank plc and Rafidain Bank**, the court made a distinction between letters of credit and performance bonds and made it clear that the question of what was required to comply with a particular performance bond was one of construction of that bond. There is no doubt that some performance bond must be paid merely on a demand being made, and whether this is so must depend on the wording of the bond itself. In **Kirames Sdn Bhd v Federal Land Development Authority** [1991] 2 MLJ 198, the guarantee provided that the guarantor shall **‘irrevocally and absolutely guarantee payment on demand without having to assign any reason whatsoever for such demand’**. In the light of these clear and unambiguous wording it can be said that this is an unconditional and a pure ‘on demand’ bond. What is required to trigger payment in such bonds is the demand simpliciter. In **Esso Petroleum Malaysia Inc v Kago Petroleum Sdn Bhd** [1995] 1 MLJ 149, the then Supreme Court on examination of the performance bond in that case held that it was a pure on demand guarantee and therefore a mere demand would trigger off the guarantees without asserting any reasons thereto. In that case the guarantor agreed to **‘unconditionally and irrevocably guarantee payment ...’**.

In the present case, however, the bond began with the words **‘If the subcontractor ... shall in any respect fail to execute the contract or commit any breach of his obligations thereunder then the guarantor shall pay ...’** (emphasis added). Now from the very wording of the bond itself it is clear and unequivocal that what would trigger off the guarantee is the sub-contractor’s failure to execute the contract or commit any breach thereof. Then and only then would the liability of the guarantor arise. Therefore giving the words in the bond their plain meaning, it cannot by any stretch of imagination be said that the bond in the circumstances of this case is an unconditional bond. Similarly in **Esal (Commodities) and Relton v Oriental Credit and Wells Fargo Bank NA** [1985] 2 Lloyd’s Rep 546, the performance bond stated **‘we undertake to pay the said amount on your written demand in the event that the supplier fails to execute the contract in perfect performance ...’** (emphasis added) the Court of Appeal held that:

... however in addition to the beneficiary making the demand he must also inform the bank that he did so on the basis provided for in the performance bond

*The court there found that when making the demands the beneficiary did not assert that there was a failure to perform the contract. The court came to the conclusion that liability under the performance bond was conditional and the condition had not been complied with. The court went on to say that this interpretation not only gave meaning but also effect to the words **‘in the event that the supplier fails ...’** which otherwise would be mere surplusage. This decision was followed by the Court of Appeal in **IE Contractors**. In that case the performance bond stated as follows:*

We undertake to pay you, unconditionally, the said amount on demand, being your claim for damages brought about by the above-named principal. (Emphasis added.)...

Clause 1 of the performance bond stipulates what those conditions are and that clause is worded in the following manner:

If the sub-contractor (unless relieved from the performance of any clause of the contract ...) shall in any respect fail to execute the contract or commit any breach of his obligations thereunder then the guarantor [i.e. the bank] shall pay to the contractor [i.e. Teknik] up to and not exceeding the sum of RM422,000 (Malaysian Ringgit four hundred twenty two thousand) only representing 10% of the contract value or such part thereof on the contractor’s demand, notwithstanding any contestation or protest by the sub-contractor or by the guarantor or by any other third party ...

Teknik interprets that clause to be just this - that the performance bond is an on demand performance bond and the liability to pay arises once a demand is made and the fact that the demand in this case is silent as to any wrongdoing or omission committed by the sub-contractor is immaterial to the validity of the demand as the issuance of the demand itself implies that a breach had already been committed by the sub-contractor...

*In Esal's case, the form of undertaking was expressed as follows: **We undertake to pay the said amount on your written demand in the event that the supplier fails to execute the contract in perfect performance.** (Emphasis added.)*

*Ackner LJ, who delivered the principal judgment, had this to say about the undertaking: ... in addition to the beneficiary making the demand, he must also inform the bank that he does so on the basis provided in the performance bond itself. This interpretation not only gives meaning and effect to the words **'in the event that the supplier fails ...'** which otherwise would be mere surplusage, but it in no way imposes an extravagant demand upon the bank.*

*Our attention was also drawn to the case of **Esso Petroleum Malaysia Inc v Kago Petroleum Sdn Bhd** [1995] 1 MLJ 149, where the Supreme Court in interpreting a performance bond that was before it, held:... [it] was ... a pure on demand guarantee, and all that was required to trigger it was a demand in writing. It would not be dependent or conditional on the production of a document, e.g. a certificate from some nominated independent person like an architect as in some building contracts, etc. Neither was it worded to make it conditional for Bank Bumiputra, the issuer of the performance bond, to inquire into the existence or otherwise of any breach of any contractual obligation between the beneficiary of the bond, i.e. the buyer in this case and the seller; at the behest of the latter itself, the performance bond was issued.*

*The undertaking to pay in **Esso Petroleum's** case simply reads as follows, **'... we hereby unconditionally and irrevocably guarantee the payment to EPMI'** and the mode of making a claim under such a guarantee was worded as follows: **All claims, if any, in respect of or under this guarantee must be made in writing and received by us at any time on or before the expiry of this guarantee.***

*From the Law Case No 1, In **Suharta Development Sdn Bhd v United Overseas Bank (M) Bhd & Anor** [2005] the judge by referring to the **LEC Contractors (M) Sdn Bhd** and hold this guarantee is an unconditional on demand guarantee.*

And for the Law Case No 2 is also the famous Malaysian case of *Teknik Cekap Sdn Bhd v Public Bank Bhd [1995]*. This case held that a performance bond was a conditional bond because the bond began with the words ***‘if the subcontractor ... shall in any respect fail to execute the contract or commit any breach of his obligations thereunder then the guarantor shall pay ...’***. However, this is the only Malaysian case that the court held the performance bond to be a conditional bond when similar wordings had been used in other Malaysian performance bond.

The held of the above law cases had been cited to differentiate the conditionality of the performance bond by its wordings. Some of the cases held that the performance bonds were conditional performance bond and some of them held the performance bond to be unconditional ‘on-demand’ performance bond. However, some interesting conclusion can be made from the words in the performance bond.

*Teknik Cekap Sdn Bhd v Public Bank Bhd [1995]*⁸⁰ held that because the performance bond because the bond began with the words ***‘if the subcontractor ... shall in any respect fail to execute the contract or commit any breach of his obligations thereunder then the guarantor shall pay ...’***, the bond was a conditional bond.

In *Suharta Development Sdn Bhd v United Overseas Bank (M) Bhd & Anor [2005]*, the judge basically using **Esso Petroleum Malaysia Inc v Kago Petroleum Sdn Bhd** to give his judgment that from the wordings of the guarantee it is clear to us that it is ‘on demand’ performance bond. The judge followed **LEC Contractors (M) Sdn Bhd** and hold this guarantee is an unconditional on demand guarantee.

CONCLUSION

After discussing on the interpretation on application of injunction relief in performance bond, it is noted that very careful choice of words should be adopted by the constructor of a performance bond so that a clear understanding of its conditionality can be achieved and undisputable. The choice of words again should be an undisputed meaning of the words in

the performance bond. This should indicate whether the performance bond itself is either purely conditional or purely unconditional 'on-demand' bond.

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