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Assessing the Level of Practice of Do-It-Yourself (DIY) Maintenance Approaches to Housing

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Abstract
The rate of deterioration and dilapidation of housing stock in Lagos, Nigeria is appalling and increasing slum areas which have become contemporary social problem in the state. The paper seeks to assess the level of practice of do-it-yourself (DIY) maintenance approaches to housing improvement in Lagos state. In the process the study identified the level of practice within the study area .To achieve the objective, the study adopted research survey technique. A total of 300 structured questionnaires were used for data collection. The survey covered 300 buildings which was selected from fifteen (15) local government areas in Lagos state based on stratified random sampling technique. Data collected were analysed using descriptive statistics. The findings of the study revealed that, the level of the practice of do-it-yourself (DIY) maintenance is low compared to other maintenance outsourcing options. Cleaning of drainage, cutting of grass, clearing of blocked drains, replacement of faulty electrical sockets, improved door security lighting and internal space re-arrangement are the most predominant service being carried out with the system. The low participation of end-users in maintaining their homes and environment has led to the appalling state of housing in the State. The implementation of the system will assist in retaining the performance of buildings in the study areas in terms of functionality, economical and social values.

Keywords: building, do-it-yourself (DIY), housing, maintenance, outsourcing.

INTRODUCTION

Despite the importance of housing to human beings, there seems to be no consensus on the meaning of housing. The concept of housing is changing, particularly from the narrow historical conception as mere shelter, to the contemporary view of housing as the total residential environment. According to WHO (1961), housing is the residential environment, neighbourhood, micro-district or the physical structure that humankind uses for shelter and the environs of that structure, including all necessary services/facilities, equipment and devices needed for the physical health and social well-being of the family and the individual.

A residential building can be described as such building (a house) that is suitable for living in or a structure that can offer a living accommodation for people. Housing in general consists of buildings, infrastructure facilities and other services that make up our built-environment. Provision of housing in a country is very essential to the social welfare of her citizens. Housing (residential building) is one of the necessities of life and it has been said to be the second most essential human need after food.

Regardless of design or quality, all buildings deteriorate physically over the years. The physical deterioration of the structure describes its wear and tear from usage, age, neglect, lack of maintenance, vandalism and weather. Buildings are born or created just as 'man'; it grows and wears out with age to the point of death just as man. Building life cycle begins from the inception stage to the design stage then the building construction stage through usage stage and finally the demolition stage. As man becomes unhealthy if no proper medical care is taken, lack of good food, quality water, clothing, proper rest, over stress and so on, so also is a building if not properly taken care of becomes unhealthy, sick, out of contest, disgusting, unattractive, bad, out of shape, stinking and appalling; this is a state of dilapidation. Adenuga (2002) stated that an assessment of our built environment in contemporary Nigeria shows that many publicly and privately owned buildings are in various states of disrepair and dilapidations. The medicine for a building that is built-to-last is proper and effective maintenance care. Maintenance as a concept refers to all works relating to repairs, replacement and / or redecoration performed on any building with the aim of increasing the useful economic life; enhance its value as well as promoting its beauty and functionality and preventing damage and injury (Olatubara et al 2007). However, despite the importance of maintenance to building, the occupants as well as the economy as a whole, maintenance decisions are usually a result of expediency, reflecting series of ad-hoc and sometimes unrelated compromises between the immediate physical needs and the availability of

financé (Lee, 1976). The general levity with which building maintenance is treated is evident in the appalling state of the buildings in Lagos State today; the situation has gradually and increasingly turns our city to slums.

Unfortunately, the level of maintenance or lack of it speaks volume about the people who inhabit or have anything to do with housing. This is particularly so as lack of regular maintenance can render a building and its auxiliary facilities and services unhealthy for living and drastically depress the quality of life and contribute to some measure of anti-social behaviour (Lee, 1976) as is prevalent in most slum and delighted areas of the cities all over the world. To tackle the rate of dilapidations of our housing stock is greatly determined by our reaction towards how we maintain the housing and its auxiliary facilities. The occupants/users or dwellers of a house and it's environ are responsible for the state or condition of the facilities serving them. Therefore, their ability to carry out or implement an effective maintenance of such facilities will enhance the performance and improve the state and condition of such house and its facilities. Do- it-yourself (DIY) maintenance is like "human caring for his physical body daily to improve and retain good and acceptable appearance in the society". So also is an individual or a home owner/occupier taking care of the home and its facilities to an acceptable standard without the involvement of professionals and contractors which save some monetary value for the practitioner. That is why this research work aims to assess the practice of do-it-yourself (DIY) maintenance approaches to housing stock in Lagos State. The objectives of the study are to assess the level of the practice to other maintenance outsourcing options and to identity the building components and facilities that the system is most practiced on in Lagos State. The study covered 15 local government areas in the State. Stratified random sampling technique was used to select respondents which are residential buildings users.

BUILDING DETERIORATION PHENOMENA AND MAINTENANCE CONCEPT

Maintenance free buildings are impossible to produce. The reality is that all the elements and components that make up a building unavoidably, deteriorates with time due to inherent defects in design and construction and the effects of environmental agents and users activities. All buildings are subject to aging, wear and tear in the performance of their functions and determination by exposure to the operating environment. Hence left to themselves, buildings will eventually become inefficient, unreliable and fail (Winderlich, 1991).

Building defects result from failure or shortcomings in the function, performance, statutory or user requirements of the structure, fabric, services or other facilities. However, Org (1997) that states building defects may be an issue only if they are major or excessive. When a building reaches a certain level of deterioration, economic or safety requirements may demand a slow down, a halt or intervention at this stage to make it possible to preserve building and their technical installations for the length of their functional lifespan (Iyagba, 2005). Building deterioration start immediately when a building is commissioned and continues overtime, lack of maintenance and care is what accelerate the impact of the agents of deterioration on such building. Only repair or rehabilitation can bring a building back to an improved state or as-good as-new state (Iyagba 2005). Amarilla (2002) states that housing structures depreciate at a rate varying between 6% and 10% depending on their physical conditions in a period of 100 years. When maintenance is ignored (delayed or not executed at all) the effect is to aggravate the rate of building deterioration from year to year (Brumara 2002). Unfortunately, however, maintenance can only reduce the rate of deterioration but cannot eliminate or reverse it as a structure cannot maintain, let alone improve itself (Winderlich, 1991).

DO – IT –YOURSELF (DIY) MAINTENANCE

The perusal of academic bibliographic databases shows little information on the understanding of what specifically counts as DIY. 'DIY' crops up in references repeatedly in relation to fields such as law, health and IT maintenance, or in relation to anti-corporate counter culture. Across different fields of activity, the term is used to refer to people providing for themselves services which they could otherwise be expected to pay a professional to do. However, as reflected in dictionary definitions, the term conventionally refers specifically to accomplishing home repair or decoration yourself without the paid services of a professional. A number of statisticians have paid attention to DIY and home maintenance and improvement behaviours, based on rational choice modeled analysis of large data set such as the American Housing Survey (Pollakowski 1988; Bogdon 1996; Baker and Karl 2002) and the Scottish House Condition Survey (Littlewood and Munro 1996). These analyses provide useful background on generic correlates of decisions to undertake home improvements, and whether to employ someone to do it or not.

THE LEVEL OF PRACTICE OF DO-IT-YOURSELF MAINTENANCE

Davidson and Leather (2000) stated that the increase consumer interest in DIY is the growth of home ownership and in real incomes, but developments in tools, materials, techniques, and in the marketing of DIY through superstores also have made building work more accessible to the layperson. Sadler and ward (1992) carried out an interview in the UK with a sample of home-owners about their repair activities,

but did not consider DIY specifically. Leather et al (1998) studied the factors influencing the propensity to carry out building work, and touch just the issue of how work is carried out.

The term DIY has been used to cover all works not carried out by contractors or professionals but directly by the home-users. But building works may sometimes be complex in nature or character, this is organised in a more complex ways, where some components have to be contracted to contractors, or undertaken on an unpaid basis by friends, relative, in-house skill workers and other contract. The 1991 EHCS (DoE, 1993) highlighted more detailed picture of the organisation of domestic repair, maintenance and improvement work by owner-occupiers. Due to the difficulty of providing adequate information on building work, the 1991 EHCS (DoE, 1993) distinguished between three types of work basically which are DIY, unpaid help and contractor work.

TYPES OF WORK CARRIED OUT

According to Davidson and Leather (2000) certain types of work are much more likely to be carried out through DIY or unpaid labour than other. The works that are likely to be left to contractors included larger and more complex tasks, jobs involving the use of specific skills (like plastering) or equipment which most households would not own (such as scaffoldings; those involving hard physical work and unpleasant or dangerous tasks (example, electrical or drainage work); tasks which would have adverse consequences if they are substandard (example, gas installations) and tasks which need to be completed quickly (example to restore the dwelling to a weatherproof state). From their studies, they analysed based on the EHCS 1991 (DoE 1993), that

I. A large amount of contractor executed double qlazing work which owners commissioned.
II. The majority of major jobs which commonly involved DIY (with the exception of external painting), were concerned with upgrading the dwelling rather than with basic repairs.
III. Jobs involving the assembly and or fitting of ready-made components were very common DIY tasks.
IV. 43% of major jobs involving kitchen units and worktops used DIY, with even higher levels of wardrodes or cupboards (52% DIY), and internal doors (52% DIY).
V. Insulation and security works also were commonly undertaken through DIY.
VI. Major jobs of basic repair or maintenance involving specific skills, such as replacement of a central heating boiler (9% DIY), difficult or dangerous jobs such as recovering the roof (12% DIY) or repointing the chimney (8% DIY), were much more likely to be left to contractors.
VII. Owners were more willing to tackle small jobs through DIY than larger ones.
VIII. There was a general increase in the use of mixed DIY/ contractor arrangements, except in the most challenging tasks such as roof work, and those such as double glazing. There was a decline in DIY installation of external doors, which may reflect the increased popularity of contractor installed UPVC products.
IX. Extension, bathroom conversions, or roof replacement were categorized as complex jobs while low skill jobs included laying loft insulation, draught-proofing windows, and most internal or external decorative work also described by Davidson et al (1997).
X. Nearly 50% of low skill jobs were carried out exclusively by DIY compared with only 11% of very high skill jobs. Nonetheless, over 25% of very high skill jobs (for example extension involving many job components or different trade skills) were carried out using a mixture of DIY and contractor works.

RESEARCH METHODOLOGY

To achieve the aim of the study, a survey research approach was selected. A structured questionaire was designed as an instrument for data collection from 300 respondents both owner-occupiers and tenants. The analysis was generalised between the two respondents. The data collected were analysed using descriptive statistics. Mean score was used to rank the level and frequency of the practice of do-it-yourself maintenance on selected building components and home facilities. Percentage score was also used to show the different levels of maintenance works outsourcing based on the EHCS (DoE 1993) work classification i.e DIY, unpaid help, contractor and mixed arrangement(combination of any of the three).The study only considered residential buildings in the selected Local government areas in Lagos State.

ANALYSIS OF DATA AND DISCUSSION

Characteristics of Respondents

According to table 1, 160 (53%) of the respondents were owner-occupiers while 140 (47%) were tenants. Majority of the household head were male with 75.3% and the female counterpart 24.7%.The household head age limit was mostly above 40years (55.3%), followed by those within 30-40 years old. Household head within 0-10 and 10-20 years old had percentage of 0.7 and 3.0 respectively. Financial income of most of the respondents was above N50, 000 per month while 4.7% had a monthly income within N5000-N15,000. Family size i.e the number of household of respondents within 2-5 and 5-10 had 150(50%) and

103(34.3%) respectively. Respondents that occupied single rooms, a room and living room and duplex had 12.7%, 22.7% and 14.3% respectively,while 48% occupied flat apartments and just 2.3% occupied mansion. 46 (15.3%) of them were classified to be in high social level and 12.3% and 72.3% were in low and average social level respectively.

Table1. Characteristics of Respondents

ITEMS	FREQUENT	PERCENTAGE
Types of occupant		
owner-occupier	160	53.0
Tenant	140	47.0
Gender		
Male	226	75.3
Female	74	24.7
Age Limit		
0-10	2	0.7
10-20	9	3.0
20-30	42	14.0
30-40	81	27.0
40 above	166	55.3
Monthly Income		
5,000-15,000	14	4.7
15,000-30,000	47	15.7
30,000-50,000	70	23.3
50,000 above	169	56.3
Family size		
0-2	22	7.3
2-5	150	50.0
5-10	103	34.3
10 above	25	8.3
Apartment occupiec		
single room	38	12.7
Room and living roo	68	22.7
Flats	144	48.0
Duplex	43	14.3
Mansion	7	2.3
Social Class		
Low Class	37	12.3
Average Class	217	72.3
High Class	46	15.3

Source: Field survey 2010

LEVEL OF THE PRACTICE OF DO-IT-YOURSELF MAINTENANCE

To examine the level of practice of do-it-yourself (DIY) maintenance management strategy in use, among other maintenance outsourcing options practiced in improving housing stock.Buildings users were asked to rate the frequency of usage of do-it-yourself (DIY) maintenance in term of the activities mentioned below. Table 2, shows that do-it-yourself (DIY) maintenance is not a major maintenance option practice among the respondents i.e. the level and the frequency of the use of do-it-yourself (DIY) maintenance in restoring, repairing or retaining building elements, components and home facilities to an acceptable standard is low amongst other options of maintenance works outsourcing. Cleaning of drainage (3.23), cutting of grass (2.91), and clearing of block drains (2.81), replacement of faulty electrical sockets (2.77) were the major activities carried out by both the owner-occupiers and the tenants.

Table 2: Frequency of the use of DIY maintenance on building components

Elements/Components/Facilities	Level of practice of DIY			
	Owner-occupier		Tenants	
	Mean	Rank	Mean	Rank
Cleaning of drainage	3.30	1	3.16	1
Cutting of grass	2.89	2	2.89	2
Unblock drains	2.86	3	2.88	3
Replace some electrical sockets	2.73	4	2.79	4
Improve door security lighting	2.58	5	2.50	7
Internal space rearrangement	2.51	6	2.60	5
Repaint faded internal painting	2.48	7	2.50	7
Install/repair damaged fans	2.43	11	2.52	6
Replace a bathroom amenity	2.47	8	2.44	10
Replace broken louvers/glass	2.44	9	2.46	9
Improve window locks/security	2.42	12	2.36	11
Install security lighting	2.40	13	2.24	13
Replace repair bathroom fitments	2.31	15	2.32	12
Install/repair damaged taps/stop valves	2.44	9	2.16	16
Replace/repair burst pipe	2.33	14	2.13	17
Completely refurbish bathroom	2.24	16	2.17	15
Install additional bathroom amenities	2.12	21	2.18	14
Replace all bathroom amenities	2.18	17	2.11	19
External painting	2.14	18	2.04	27
Repair cracks in wall plaster	2.08	24	2.10	20
Completely rewire dwelling	2.11	22	2.04	27
Fitted wardrobes/cupboards	2.09	23	2.07	23
Repair damage ceiling	2.01	27	2.12	18
Replace internal door	2.00	28	2.08	21
Replace kitchen cupboards/worktops	2.00	28	2.08	21
External wiring circuit	2.14	18	1.87	37
Completely refit kitchen	1.97	34	2.05	24
Fix burglary proof	2.14	18	1.89	36
Replace damaged wall and floor tiles	2.02	26	1.98	29
Replace external door only	1.99	31	1.94	32
Extend water supply pipe work	2.03	25	1.91	35
Patch cover to leak roof	1.90	39	2.05	24
Replace external door and frame	1.96	35	1.95	31
Replace cover to leak roof	1.89	40	2.05	24
Work to paving	1.98	33	1.94	32
Fit shelving	1.93	37	1.98	29
Repair garage/out building	1.99	31	1.86	38
Work to fences/boundary walls	2.00	28	1.77	41
Renew pitched roof covering	1.87	42	1.86	38
Install double glazed windows	1.91	38	1.79	40
Replace bath water heater	1.95	36	1.74	44
Repoint external wall	1.77	45	1.93	34
Plaster/replaster ceiling	1.89	40	1.77	41
Replace/refix roof slates or tiles	1.85	44	1.76	43
Install security alarm	1.87	42	1.69	45

Source: Field Survey 2010

Note; Mean score is based on a likert scale of Never (1), rarely (2), less frequently (3) Frequently (4).

The two group of respondents also agreed that improve door security lighting (2.56), internal space re-arrangement (2.56) and repaint faded internal painting (2.51) were predominance do-it-yourself (DIY) maintenance activities carried out. Plaster/replastering of ceiling, replace/refix roof slates and tile and install security alarm amongst others were activities that were rarely executed using do-it-yourself (DIY) maintenance option by both respondents.

Table 3: Nature of executing maintenance work (1999 – 2010) among respondents

Elements/components/ facilities	No of jobs executed Minor and major		Outsourcing options (%)				
	N1		N2	Unpaid help	DIY	Contractor	Mixed arrangement
External painting	245	900	199	3.02	10.56	73.87	12.56
Install double glazed windows	150	372	153	0.00	16.34	67.32	16.34
Completely refit kitchen	194	449	188	7.98	26.60	46.81	18.62
Replace external door and frame	224	498	207	2.90	16.43	64.73	15.94
Work to fences/boundary walls	169	425	174	4.05	13.87	63.01	19.08
Internal space re-arrangement	229	1,132	221	5.88	62.44	12.67	19.00
Completely refurbish bathroom	200	583	188	2.13	23.40	52.66	21.81
Fittedwardrobes/cupboard	176	484	180	5.56	26.11	50.00	18.33
Replace bath water heater	133	356	133	6.77	31.58	41.35	20.30
Work to paving	167	444	165	7.27	34.55	44.24	13.94
Cutting of grass	191	3,975	198	9.60	64.14	11.11	15.15
Cleaning of drainge	226	6,522	226	8.85	59.73	13.71	17.70
Completely rewire dwelling	161	566	154	7.79	13.64	58.44	20.13
Renew pitched roof covering	156	348	149	4.03	7.38	80.54	8.05
Replace internal door	192	443	189	5.29	13.76	59.26	21.69
Replace kitchen cupboard/ worktops	182	385	178	5.62	20.79	49.43	24.16
Plaster/replaster ceiling	154	385	178	5.62	20.79	49.43	24.16
Replace/refix roof slate	165	372	163	4.91	12.27	66.87	15.95
External wiring circuit	196	387	184	4.35	16.30	61.41	17.93
Replace external door	194	434	188	7.44	11.17	59.04	22.34
Install security alarm	126	249	135	2.96	31.11	48.15	17.78
Replace all bathroomamenities	177	474	176	2.27	25.57	52.84	19.32
Improve window locks/security	213	658	207	6.28	30.43	48.31	14.55
Repaint external wall	165	412	160	9.38	13.75	63.13	13.75
Fit shelving	155	345	151	13.91	27.15	38.41	20.53
Replace some electrical sockets	252	1,218	240	5.00	45.83	34.58	14.58
Install security lighting	194	655	189	6.88	38.62	39.68	14.81
Replace/repair bathroom fitments	214	801	215	6.98	28.37	42.79	21.86
Improve door security/ locks	227	673	220	8.64	34.55	40.00	16.82
Replace a bathrooms amenities	203	666	196	6.12	31.63	41.84	20.41
Unblock drains	226	2,611	221	9.05	50.23	24.89	15.84
Replace cover to leak roof	165	575	162	4.94	17.28	59.88	17.90
Patch over to leak roof	149	403	145	3.45	15.17	59.31	22.00
Install additional bathroom amenities	181	469	181	3.87	29.28	48.09	18.70
Extend water supply pipe work	162	385	165	5.45	17.58	62.42	14.80
Repair cracks in wall plaster	192	506	186	3.76	20.43	51.61	24.48
Repair garage/out building	141	514	132	7.58	16.67	52.27	23.48

Source: Field survey 2010

Note: *N 1 is the total respondents out of the total of 300 that responded to the nature of work.*

N 2 is the total respondents out of the total of 300 that responded to the types of outsourcing.

The percentage total of the outsourcing options is based on the total of respondents (N 2) that selected an option.

In addition, the study sought to show the level of the use of other outsourcing maintenance options to do-it-yourself (DIY) maintenance from the number of maintenance jobs executed either minor or major maintenance works within the year 1999-2010. According to table 3,internal space re-arrangement (62.4%), cutting of grass (64.1%), cleaning of drainage (59.7%), replace faulty electrical sockets (45.8%), and clearing of block drains (50.23%) have more number of times of executions. Respondents used do-it-yourself (DIY) maintenance option instead of outsourcing to a contractor to execute the activities. However, maintenance work carried out on the others elements, components and facilities were executed according to the respondents mostly by engaging a contractor or by the use of mixed arrangement. The use of unpaid help option is low compared to others options.

DISCUSSION OF FINDINGS

According to Davidson and Leather (2000) that large amount of contractor executed double glazing work which owners commissioned, is in support of the findings from table 3, installation of double glazed windows (67.32%) was majorly executed by contractors. 43% of major jobs involves kitchen units and worktops used DIY, with even higher levels of wardrodes or cupboards (52% DIY), and internal doors (52% DIY) as stated by Davidson and Leather (2000) which is in contrast to the study. Replacement of internal door (59.26%), fitting wardrodes/cupbroad (50.0%), replacement of kitchen and cupboard/worktops (49.43%) were all carried out using contractors. Installation of security lighting had (39.68%) and (38.62%) for contractor's and DIY respectively. Improving window locks/security was majorly executed by contractors (48.31%), with 30.43% DIY practice. In Davidson and Leather (2000), security works were commonly undertaken

through DIY. Also stated, that major jobs of basic repair or maintenance involving specific skills, such as replacement of a central heating boiler (9% DIY), difficult or dangerous jobs such as recovering the roof (12% DIY) or repointing the chimney (8% DIY), were much more likely to be left to contractors. The study shows similar trend in home maintenance, where major jods were executed by contractor instead of using DIY. Such as renewal of pitched roof covering (80.54% contractor), external painting (73.87% contractor), e.t.c. Minor jobs that can easily be handled were executed by DIY such as internal re-arrangement (62.44%), cutting of grass (64.14%), cleaning of drainage (59.73%), unblock drains (50.23%) and replacement of some electrical sockets (45.83%).

CONCLUSIONS

The paper explores DIY maintenance culture as it is practice in Lagos, Nigeria. The issues of maintenance of property assets as become a contemporary social problem in Nigeria. Both the public and private sector and individuals where face with the question of how to tackle the problem. The study revealed that the level of practice of DIY maintenance approaches to housing is low compared to other outsourcing options. Minor jobs such as home cleaning and re - arrangement was the major work that DIY maintenance is used to execute.Which is low to the practice of the system as revealed in Davidson and Leather (2000) study in United Kingdom London. The level of participation of the end-users in direct involvement in maintenance of housing is low which indicate that maintenance of housing is neglected by user over time, as a result leads to the appalling state of housing in the study area. These necessitate further action to how to increase or encourage the participation of end-users in DIY maintenance at homes and offices. Implementation of the practice will help in retaining the performance of the buildings to an acceptable standard of the users and improvement of the physical, economical and social value of housing stock in the study area.

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