

Assessment of the Determinant Factors of Do-It-Yourself (DIY) Maintenance Approaches to Housing: A Perspective of Owner-occupiers and Tenants.

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Abstract:

The study assessed the practice of do-it-yourself (DIY) maintenance as a means of improving housing stock in Lagos state. The study identified the factors influencing and militating against the practice. In achieving the set objectives, the study adopted research survey technique. A total of 300 questionnaires comprising 160 for owner-occupiers and 140 for tenants were administered for the study. The population was selected from fifteen (15) local government areas in Lagos state, based on stratified random sampling technique. Data collected were analysed using descriptive and inferential statistics. The findings of the study revealed that the factors influencing the practice of do-it-yourself (DIY) maintenance are; to provide a habitable environment, to retain the performance of facilities amongst others while the factors militating against the practice are; jobs involving special skills, health and safety issues, lack of technical know-how amongst others. The hypotheses postulated reveal that there is an association between the factors influencing the practice of do-it-yourself (DIY) maintenance by the owner-occupiers and the tenants. There is also an agreement between the factors militating against the practice as perceived by the owner-occupiers and the tenants. Based on the findings, the study recommends vocational training for building users, building products should be user's friendly, provision of DIY manual for products and tools that will facilitate the practice amongst others.

Keywords:

built-environment, DIY, do-it-yourself, habitable, user friendly

1 Introduction

The state of disrepair of housing and its auxiliary facilities in Lagos state is a concern to both the government and individual citizenry. Adenuga (2002) states in his assessment on built environment revealed that many publicly and privately owned buildings are in various states of disrepair and dilapidations. High proportions of residential buildings in Lagos are dilapidated resulting to increased slums. To meet up with the Millennium Development Goals endorsement of "cities without slums" before the year 2015, proactive measures have to be embraced. Housing maintenance strategy has to be put in place in order to control the menace caused by slums in our cities today. For a building to retain its functionality and value throughout its life cycle, it must be well cared for through maintenance. Hence housing maintenance strategy to be adopted should involve the direct participation of building users.

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 and Adegoke 2000). Maintenance, according to Bello (1994) is the entire endeavour to keep physical facilities – structure equipment, machinery and services at a satisfactory level of technical

performance and quality of the lowest total cost. Odudu (1994) sees maintenance with respect to building and their services as a continuum of the construction process. According to him, the level of maintenance governs the health of a building throughout its life cycle. Therefore, maintenance involves the total package of all activities taken in caring for a building and all its facilities and services in a state to continue to perform its intended functions to the benefits of the end users, owners and the environment.

Although, there are different types of maintenance outsourcing applicable in maintaining housing stock with factors that determine their applicability. But this study focus on do-it-yourself (DIY) maintenance which involves the direct engagement of the buildings users to tackle minor maintenance and improvement work issues in the home. The aim of the research is to assess the determinant factors of the practice of do-it-yourself (DIY) maintenance approach as a mean of improving housing stock while the objectives of the study is to identify the factors influencing and militating against the practice of the system in improving housing stock in Lagos state.

2 Do-It-Yourself (DIY)

The perusal of academic research works does little to help basic 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 maintenance or modification tasks without the paid services of a professional.

3 Factors that Determines the Practice of Do-It-Yourself (DIY) Maintenance Activities

The nature of who carry out DIY is determines by various factors. Viby Mogensen (1990) highlighted the following variables as income, status in the labour market, type of occupancy, gender, age, marital status and life cycle category region and degree of urbanization. Gronau (1977) stated that substitution between white and black labour, leisure and DIY is thought to depend on wages, taxation, and the cost of working and DIY productivity. The change in time, over geographical regions as its affects differences in hourly wage rates, explains the inclusion of geography as a variable.

3.1 Household Composition

Bogdon (1996) finds household composition as a major determinant of the likelihood of a household taking on DIY. With multiple adult households most likely to undertake it, single parent families the least likely, as well as finding that, people are more likely to take on a contractor where projects are of larger scale, complexity or risk. Baker and Kaul 2002, highlights the significant relationship of changes to household composition with the likelihood of home remodelling. Munro and Leather (2000) explore homeowner’s accounts of why they take on specific home maintenance and improvement tasks, which was due to the problem of the declining condition of the British housing stock despite increasing home ownership.

3.2 The Role of Age and Marital Status

The older people get, the less likely they are to carry out minor repairs and maintenance or improvements in their own home (Brodersen, 2003). Marital status here defined as being married or cohabiting, as opposed to being single. Married / cohabiting people are more likely to carry out minor DIY than single people. Also having children does not have a statistically effect on major DIY, and does not increase the likelihood of using DIY for major home improvements and

alterations according to Brodersen, 2003. Pollakowski (1988) also agrees that age affect DIY. Davidson & Leather, (2002) pointed out that the older heads of households especially; those over 75 were much less likely than average to carry out DIY work, and much more likely to make exclusive use of contractors.

3.3 Leisure

Mintel (2005) claimed that over a quarter of adults claim to enjoy DIY with 8% identifying DIY as a hobby. The report puzzles over why people prefer to spend time on the labours of DIY rather than more obvious leisure pursuits, highlighting that it exists as a leisure activity even for those able to afford to employ someone else to do the work.

3.4 Self Satisfaction / Pride

Keat and Abercrombie (1991) found a complexity in DIY when people clearly have the means to employ a contractor, but feel that the employed person may not be able to achieve the distinctive and innovative solution to which they aspire and which they can achieve their selves.

3.5 Gender

According to Brodersen (2003) in Denmark and Norway, there are no significant differences between men and women's about the practice of minor DIY. However, in Great Britain with regard to minor improvements and alteration, men specify significantly more DIYs than women do. However, in most studies there is a strong male dominance in minor repairs and maintenance (Flood 1990; Smith 1986). Male-Female differences have been reduced in both DIY activities and household work during the last decade according to Flood and Grasjo (1995).

3.6 Income

According to Brodersen (2003), income has no importance for the likelihood of carrying out DIY activities in Great Britain, and the correlation is only statistically certain at the 10% level in Norway for minor DIY. In Denmark, income is significant for major DIY, and in Sweden for both minor and major DIY. In these countries, the likelihood of carrying out minor and major DIY increases with income, while the opposite is true in Germany, where the likelihood of carrying out both minor and major DIY declines with income (Brodersen, 2003). Williams (2004) identifies a traditional assumption in retail studies to be that DIY is a rational response to an inability to pay for external labour, essentially fitting the model of rational consumer. Pollakowski (1988) finds a complex relation between income and the likelihood of a household undertaking DIY. According to Davidson and Leather (2002), in terms of income, poorer households were more likely to use a contractor and less likely to use DIY, while for higher income groups the position was reversed.

3.7 Occupation and Education

Soren Pedersen (2003) stated that it is precisely skilled workers or people with a vocational education who contribute most to the black economy in Denmark, Sweden, Norway and Germany. Ploug (1990) found that the short term unemployed men spent three hours more a week on repairs and maintenance than other males, while unemployed women spent slightly less time on these activities than either employed men or women.

Brodersen (2003), stated that apart from Germany, education in itself has no effect on the likelihood of minor DIY. That in Germany, people without vocational training are less likely to carryout minor DIY, while people who have gone to technical college are more likely to compared with people who have acquired their vocational training in a firm.

3.8 Unemployment

Obviously, the higher the unemployment is, the higher the incentive to be engaged in DIY activities. Unemployed people have less money for purchasing goods and services and therefore a higher incentive to engage in DIY activities. Additionally, DIY activities may enhance the unemployed's self-esteem, thereby further stimulating DIY activities.

3.9 Tools and Materials of DIY

According to Watson and Shove (2005) DIY stores are increasingly good at helping the consumer, or researcher, understand in what relations particular commodities might become useful. A basic problem in DIY retail is that the majority of products have multiple potential uses. Therefore, it is impractical to display products together to form the ensemble needed to realise a project. DIY economic is growing, there are number of ready-made kits of parts for common projects, such as putting up a shelf, including materials, fixings and instructions in a single pack. Information boards and free 'how to' leaflets highlight lists of 'what you need' together with an outline of the practical steps involved in affecting a particular project. DIY outlets are responding to long-standing criticism by increasing the expertise and availability of staff, not least to be able to advice on the constituent parts of a project. In providing such information according to Waston and Shove 2005, DIY stores are also making available, to some extent, other essential components of a DIY project, seeking to instil on consumers some of the basic competence and confidence to take it on. Retail spaces themselves therefore reveal the practical relationality of the usefulness of the products they sell to be useful, most products have to be situated in proper relation, to other products, the materials and structures of the home, the competencies and capacities of the DIY practitioner and so on.

3.10 Competence

Campbell (2005) stresses that skill; knowledge and judgement need to be brought to the processes of craft consumption. Leadbeater and Miller (2004) place the satisfaction of acquiring skill and knowledge as one of the central attractions of 'pro-am' pastimes including serious DIY. Davidson and Leather (2002) stated that, in terms of socio-economic group, skilled and professional workers were more likely to use DIY or mixed arrangements and less likely to use contractors.

4 Research Methodology

To achieve the aim of the study, a survey research approach was selected. A structured questionnaire was designed as an instrument for data collection from 300 respondents. The data collected were analysed using both descriptive and inferential statistics. Mean score was used to ranked the determinant factors as they affects the practice of DIY in Lagos state. While regression analysis was used to test the hypotheses to establish if there is an association between the factors influencing and militating against the practice of do-it-yourself (DIY) maintenance by building owner-occupiers and the tenants.

5 Analysis of Data and Discussion

5.1 Characteristics of Respondent's

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%), follow 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.

5.2 Determinant Factors that Influence the Practice of DIY Maintenance

From table 2, building owner-occupiers agreed that to make facilities remain functional (3.32), provision of a habitable environment and acceptable standard (3.30), minor maintenance jobs that can easily be tackle by them (2.98) and self satisfaction (2.95) were the major reasons why they DIY in their homes. In addition, issues like time and emergence reasons for repair of faulty facilities (2.80), availability of DIY tools and products (2.78), reduction of home maintenance cost (2.85) and competence of using DIY tools and products (2.84) were also agreed on as factors that influence their desire to practice the system. The tenants agreed that provision of habitable environment and acceptable standard (3.22), making facilities remain functional (3.11), minor jods that can easily be tackle (2.77) and self satisfaction (2.76) were DIY practice motivating factors.

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 occupied		
single room	38	12.7
Room and living room	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

Table 2: Factors influencing the practice of DIY maintenance
(Source: Field Survey 2010)

Determinant factors that influence the practice of DIY maintenance	owner-occupiers		Tenants	
	Mean	Rank	Mean	Rank
Habitable environment and acceptable standard	3.30	2	3.22	1
Makes facilities remain functional	3.32	1	3.11	2
Minor jobs that can easily be tackle	2.98	3	2.77	3
Self satisfaction	2.95	4	2.76	4
Time and emergence reasons since faulty facilities have tobe repair immediately	2.80	7	2.72	5
Availability of DIY tools and building products	2.78	8	2.65	6
Save money and reduced maintenance cost	2.85	5	2.59	7
Technical know-how of using DIY tools and equipment	2.84	6	2.55	9
Technical knowledge of installation or removal of build- ing products	2.68	11	2.57	8
High labour charges of skilled workers	2.69	10	2.48	10
Availability of information on DIY products and tools from the manufacturer	2.72	9	2.40	13
Degree of enjoyment and fun	2.68	11	2.41	12
Job involving special skills	2.66	13	2.45	11
Building maintenance rules and regulation	2.63	14	2.36	14
Leisure time activities and pleasure at home	2.59	16	2.32	16
Strength and ability to carry-out the activities	2.62	15	2.25	18
Law enforcement agencies and avoidance of fine charges	2.58	17	2.23	19
Interest in learning new skill works/trades	2.47	18	2.30	17
Large jobs taking more time	2.31	19	2.33	15
Unpleasant or dangerous task	2.24	21	2.15	20
Learned construction professional	2.25	20	1.90	22
Employed contractors/tradesmen may not achieve one acceptable standard requirement	2.14	22	1.95	21
Enjoy hard physical work	2.03	23	1.75	24
Unemployment	1.86	24	1.84	23

Note: Mean is based on a likert scale of Disagree (1), somehow (2), Agree (3), strongly Agree (4)

Futhermore, owner-occupiers also accepted that high labour charges of skilled workers (2.69), degree of enjoyment and fun involved (2.68), leisure and pleasure (2.59), physical strength (2.62) and law enforcement agencies (2.58) encouraged them to be a DIY practitioner. But the tenants believed that such factors somehow influence them to be a DIY practitioner. Unemployment and incompetence of contractors and tradesmen among the respondent was not a strong reasons for the practice.

5.3 Determinant Factors Militating Against DIY Maintenance Practice

According to table 3, health and safety issues (2.84), job involving special skills (2.80), lack of information/awareness about DIY maintenance practice (2.80) were major factors that militate against the practice of the system among owner-occupiers. Among the tenants jobs involving special skill (2.69), health and safety issues (2.56), poor emergency preparedness plan in the built-environment (2.56) and stress due to day work (2.55) were major demotivator of the practice of DIY maintenance at home. Lack of availability of DIY tools and building products ranked same i.e (14th) among the two groups of respondents with 2.54 and 2.35 for owner-occupiers and tenant's respectively. Then the non-availability of DIY tools and products had a negative effect on owner-occupiers than the tenants. The two groups of respondent believed that rapid rate of deterioration and damage of building fabrics, high cost of building materials and products, lack of provision of maintenance grants and tools loans and family economic somehow affect the decision of not engaging in DIY practice.

Owner-occupiers also agreed that age (2.59) and time constraint (2.53) were militating factors against the practice. But the tenants considered age (2.34) and time constraint (2.27) as factors that somehow discouraged them from the practice.

Table 3. Determinant factors militating against DIY maintenance
(Source: Field Survey 2010)

Determinant factors militating against DIY maintenance	Owner-occupiers Tenants			
	Mean	Rank	Mean	Rank
Job involving special skills	2.80	2	2.69	1
Health and safety issues involved in DIY maintenance	2.84	1	2.56	2
Lack of technical know-how of installation and removal of building components and elements	2.76	4	2.52	6
Poor emergency preparedness plan in the built environment	2.71	5	2.56	2
Stress due to day work	2.70	6	2.55	4
Large jobs taking more time	2.70	6	2.53	5
Unpleasant or dangerous tasks	2.55	12	2.51	7
Sub-standard materials/products in the market	2.55	12	2.47	9
Lack of knowledge of the life span of building components	2.59	9	2.37	12
Problems of interfaces between building components/elements during installation	2.56	11	2.41	11
Have enough money to engage contractor and skilled labour	2.61	8	2.34	16
Lack of availability of DIY tools	2.54	14	2.35	14
Lack of availability of DIY building products	2.54	14	2.35	14
Involves hard physical work	2.50	17	2.44	10
Age limitation	2.59	9	2.34	16
Lack of builder list and DIY products manufacturers information	2.48	19	2.36	13
Lack of information/awareness about DIY maintenance	2.80	2	2.49	8
Faulty design and construction work	2.47	20	2.33	19
Time constraint	2.53	16	2.27	20
Rapid rate of deterioration and damage of building fabrics	2.41	21	2.34	16
Lack of home maintenance policy/plan	2.50	17	2.24	21
High cost of building materials and products	2.27	22	2.24	21
No provision for maintenance grants and tool loans	2.14	24	2.20	23
Family economic i.e. no capable person to handle DIY	2.16	23	2.10	24
Building maintenance is not necessary	1.46	25	1.43	25

Note: Mean is based on likert scale of Disagree (1), Somehow (2), Agree (3), strongly agree (4).

Also the owner-occupiers agreed that they we not DIY since they can pay a contractor (2.61).The hard physical work involved, unpleasant or dangerous tasks and problem of interfaces were also militating factors against the practice according to the owner-occupiers. The two groups of respondents agreed that building maintenance is necessary.

5.4 Hypothesis One:

The study further sought to know if there is an association between the factors influencing the practice of do-it-yourself (DIY) maintenance by building owner-occupiers and do-it-yourself (DIY) maintenance practice by the tenants.

H₀: There is no association between the factors influencing the practice of do-it-yourself (DIY) maintenance by building owner-occupiers and the tenants.

Table 4: Spearman rank correlation coefficient of the association between the factors influencing the practice of DIY maintenance,

Variable	r	df	t _{cal}	t _{tab}	decision
Influencing factors	0.96	22	16.23	1.717	Reject H ₀

At **0.05** level of significant and degree of freedom of 22, **t_{cal} = 16.23** and **t_{tab} = 1.717** since **t_{cal} > t_{tab}**, **H₀** is rejected. Therefore, there is an association between the factors influencing the practice of do-it-yourself (DIY) maintenance by building owner-occupiers and the tenants. Also since **r=0.96** it shows a positive association between the variables as shown in table 4. In addition, figure 1.0 indicates the association between the variables graphically.

5.5 Hypothesis Two:

The study further sought to know if there is an agreement between the factors militating against the practice of do-it-yourself (DIY) maintenance by building owner-occupiers and do-it-yourself (DIY) maintenance practice by the tenants.

H₀: There is no agreement between the factors militating against the practice of do-it-yourself (DIY) maintenance by building owner-occupiers and the tenants

Table 5: Spearman rank correlation coefficient of the association between the factors militating against the practice of DIY maintenance

Variable	r	df	t _{cal}	t _{tab}	decision
Influencing factors	0.81	30	7.62	1.697	Reject H ₀

According to the table 6, at **0.05** level of significant and degree of freedom of 30, **t_{cal} = 7.62** and **t_{tab} = 1.697**, since **t_{cal} > t_{tab}**, **H₀** is rejected. Therefore, there is an agreement between the factors militating against the practice of do-it-yourself (DIY) maintenance by building owner-occupiers and the tenants. Also since **r=0.81**, it shows a positive agreement between the variables as indicated in figure 2.0.

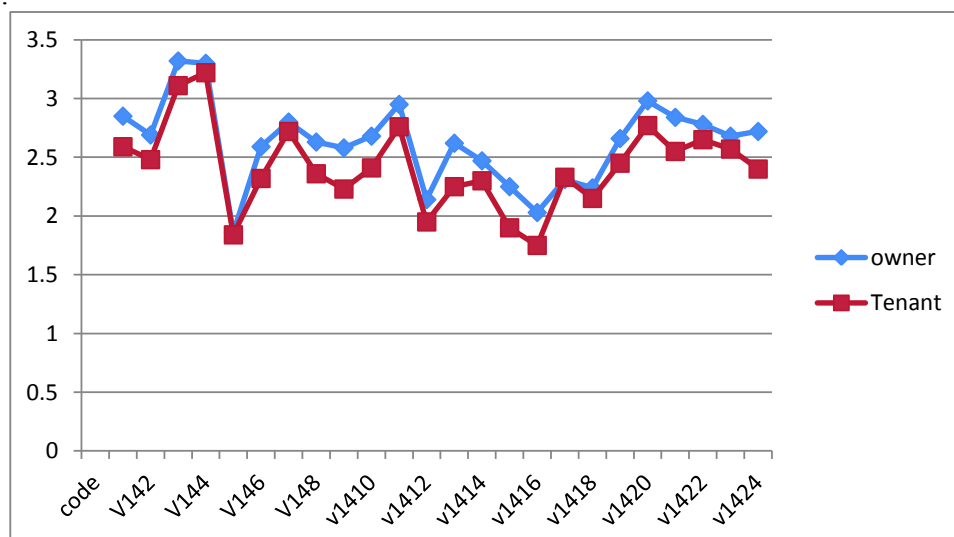


Figure 1.0: Shows the association between the factors influencing the practice of DIY maintenance in improving housing stock.

(Source: Field Survey, 2010)

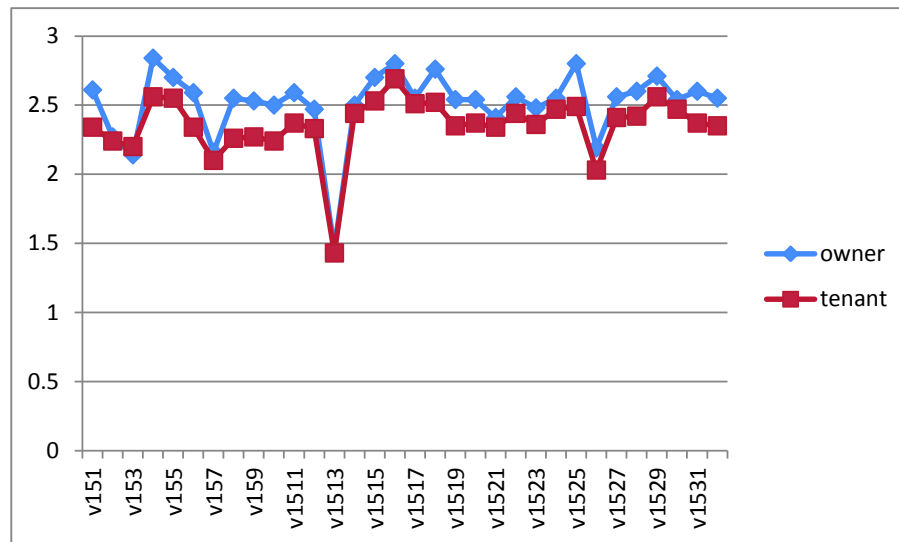


Figure 2.0: Shows the association between the factors militating against the practice of DIY maintenance practice in improving housing stock.

(Source: Field Survey, 2010)

6 Discussion of Findings

The study reveals that the factors influencing and militating against the practice among DIY home maintenance practitioner in Lagos State were the same according to table 4 and 5, that shows a positive association between the factors that determine the practice of the system. The effect of gender on the practice shows that more male household heads were involved more than the female counterpart in support of Davidson and Leather (2000). Age limitation somehow militate against the practice (table 3). Gronau 1977, believed that age affect DIY productivity. DIY activities increase with unemployment according to Soren Pedersen (2003) but the study was in contrast, unemployment had no influence on practice. Bogdon (1996) find household composition a major determinant of the likelihood of taking on DIY maintenance, with multiple adult households most likely to undertake it. From table 1, most households head were adult within the age of 20 above.

Mintel (2005), stated that quarter of adults claim to enjoy DIY, with 8% identifying DIY as a hobby. Leather et al (1998) attested that people DIY as a choice often for enjoyment, as hobby, a means of self-fulfilment or self expression. Clarke (2000) and Wood (2003), described DIY as the construction and maintenance of self identity and self-esteem. Findings from the study also reveals the same trend of respondents opinion in table 2, habitable environment and acceptable standard, self-satisfaction, degree of enjoyment and fun derived from the practice were influencing factors. Also the issue of leisure time and pleasure at home somehow influence DIY practice.

The issues of competence cannot be overemphasis in DIY maintenance practice. Campbell (2005) stresses on skills, knowledge and judgement in the practice of DIY. Warde (2005) touches on significance of competence in enabling action and reproducing practices. These actually buttress the reasons why the major factors militating against the practice were skills, technical know-how and information.

Enhancing the practice of DIY maintenance in Lagos State, from the oral interview conducted respondents strongly agreed on public enlightenment campaign, educational and vocational training, adoption of modern DIY tools and products technology e.t.c back with an enactment of law by the State government that will mandate housing maintenance. Watson and Shove 2005, identify relatively formal knowledge acquisition such as school CDT (Craft, design and technology) lessons,

by referring to DIY manuals, internet forums or being taught by an experience person. Based on the findings, the study recommends that educational and vocational training on DIY maintenance practice should be introduce to schools, craftwork and building end-users, building products should be users friendly and DIY compliances and landlord/tenant covenant should mandate proper building care for building users.

7 Conclusion

Conclusively, the issue of DIY maintenance approach to housing in the study area is subject to factors influencing and militating against it. DIYer's agreed that the major influencing factors for engaging the system were to create a habitable environment, maintain an acceptable standard, to make facilities functional, for self-satisfaction and enjoyment derived from the practice. The factors militating against the system were skills, technicality and information about the system. Both owner-occupiers and tenants were subject to these factors according to the tested hypotheses. Due to the importance and need for maintenance in residential building. Grassroot participation i.e the direct involvement of building user's in maintenance practice will aid to retain and restore the state and value of housing in Lagos, Nigeria. This can be encourage by the engagement of do-it-yourself maintenance practice by all building user's in their own capacity. Eradicating or reducing the state of disrepair of housing stock experience in the study area today.

8 References

- Adenuga, O.A (1999), Building Maintenance in Nigeria; Structural Deterioration, Recognition and Diagnosis of Causes and Remedies. *Shelter Watch* Lagos, 1(01), pp 10-25
- Baker, K., and Kaul, B. (2002), 'Using multiperiod variables in the analysis of home improvement decisions by homeowners', *Real Estate Economics*, 30(4), pp 551-566
- Becker, G. (1965), 'A theory of the allocation of time', *Economic journal*, no 75, vol. 299
- Bello, M. (1994), 'Effective Fleet Management, Adequate Maintenance and Safety on Physical Distribution'. A Term Paper Submitted to the center for Transport Studies, Ogun State University, Ago – Iwoye.
- Bogdon, A.S. (1996), 'Homeowner Renovation and Repair: The Decision to Hire Someone Else to do the project, *Journal of Housing Economics*, 5(1), pp 23-42.
- Brodersen, S. (2003), Do-it-yourself Work in Northwestern Europe, Maintenance and Improvement of Homes, Study No. 11, The Rockwool Foundation Research Unit, Copenhagen.
- Campbell, C. (2005) 'The craft consumer: Culture Craft and Consumption in a postmodern society' *Journal of consumer Culture*, 5 (1), pp 23 – 42.
- Clarke, A. (2001). The aesthetics of Social Aspiration. Home Processions D Miller. Oxford. Berg.
- Dant, T. (2005), Knowlegde in people and things unpublished paper presented to workshop Designing and Consuming: exploring ideas of objects, practices and process, university of Durha, July 2005.
- Davidson, M and Leather, P. (2000), Choice of necessity? A review of the role of DIY in tackling housing repair and maintenance, *Construction management and economic*, 18, pp 747-756.
- Gronau, R. (1977), Leisure, Home Production, and work- the theory of the Allocation of Time Revisited, *Journal of Political Economy*, 85(6), pp 1099-1123.
- Leadbeater, C. and Miller, P. (2004), The Pro-Am Revolution. London, Demos.
- Mintel (2005), DIY Review 2005 MintelInternational Group Ltd.
- Munro, M. and Leather (2000) 'Nest building or investigating the future? Owner-occupiers home improvement behaviour, *Policy and Politics*, 28(4), pp 511-526
- Odudu, W. (1994), 'Maintenance Management Culture' A Paper Presented at Seminar on Highrise Buildings in Nigeria: Problems and Prospects, Lagos.

- Olatubara, C., Agbola, T. and Egunjobi, L. (2007), Housing Development and Management: A Book of Reading Published by Department of Urban and Regional Planning Faculty of the Social Sciences, University of Ibadan, Ibadan Nigeria.
- Pedersen, S. (2003), The Shadow Economy in Germany, Great Britain and Scandinavia. A Measurement based on questionnaire surveys. The Rockwool Foundation Research Unit, Study No. 10 Copenhagen.
- Pollakowski, H.O. (1988), The Determinants of Residential Renovation and Repair Activity. Final Report Prepared for the office of Policy Development and Research, U.S. Department of Housing and Urban Development. Washington, DC.
- Shove, E. (2005), 'Consumer, Producers and Practices: Understanding the invention and re-invention of Nordic Walking. *Journal of Consumer Culture*. 5(1), pp 43-64.
- Slater, D. (1997), Consumer Culture and Modernity. Cambridge, Polity Press...
- Viby Mogensen, (1990). Do-it-yourself Work in: GunnarViby Mogensen(ed). 1990, Time and Consumption statistic Denmark Copenhagen.
- Warde, A. (2005) 'Consumption and Theories of Practices' *Journal of consumer culture* (2) 131-153.
- Watson, M. and Shove, E. (2005). Doing It Yourself ? Products, Competence and Meaning in the Practices of DIY. www.durham.ac.uk/designing.consuming.
- Williams, C. (2004). 'A Lifestyle choice? Evaluating the motive of do-it-yourself (DIY) consumers. *International Journal of Retail and Distribution Management* 32 (5): 270-278.
- Woodward, I (2003). 'Divergent narratives in the charging of the home amongst middle class consumer – Aestheti, comfort and the symbolic boundaries of self and home. *Journal of Sociology* 39(4): 391-412.