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A pilot study on the veracity of socio-environmental design factors (SEDEF) model as a panacea to residential neighbourhood crime in Nigeria

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Abstract
The soaring rate of insecurity within the residential neighbourhood globally and its attendant consequences on the general economy has become a topical issue among researchers, residents and government alike. This is manifested in the adverse effect on property investment, dwindling income from property tax, loss of lives and psychological effect of fear of crime among others. The Socio-Environmental Design Factors (SEDeF) model was proposed as an alternative or at least a supplement to the penal system (use of Police, Courts and Prisons) as a veritable preventive technique to residential neighbourhood crime in Nigeria. The report showed the results of the pilot study carried out in this respect. This included the descriptive statistics, reliability test, content and construct validity, normality test and the exploratory factor analysis (EFA) among others. The summary of the reliability test of each construct of social risk factors; environmental design factors, residential neighbourhood crime and residential property values stood at 0.780; 0.844; 0.837 and 0.756 respectively while the cumulative percentage of the rotation sums of squared loading of the exploratory factor analysis stood at 77.90%. These, in line with the existing fitness indices show a favourable result indicating a go-ahead to the main research.

Keywords: Nigeria, penal system, pilot study, residential neighbourhood crime, SEDeF

Introduction

Globally, urban violence is said to be soaring due to uncontrolled urbanisation and advent of industrialisation (Gibbon, 2004; Idowu, 2013) [14]. However, residential neighbourhoods have been seen to be more negatively affected by property crime, which is otherwise called residential neighbourhood crime, in the forms of burglary, larceny, vandalism, theft, assault, robbery, rape and even homicide. This is due to the fact that valuables are kept in the house and residents are in better part of the day and week, (with exception to retirees' homes) have to leave their homes empty to workplaces, schools, recreation and place of worship among others thereby making their homes target of attack by prospective offenders. Also, crimes like rape and homicide are pronounced in residential neighbourhoods due to the fundamental function of serving as living accommodation after the day's activities.

Property crime especially within the urban setting has globally become a subject of discussion among urban planners, policy makers, researchers, international organizations in charge of environmental sustainability and other allied professionals. This is due to the devastating effect it has on almost every sector of the economy. Essentially, the consequences of property crime cut across the residents, neighbourhood and government. To the residents, property crime has been found to be capable of having psychological effect of fear which studies have discovered to cause health impairment on the residents (Cozens, 2015) [7]. Research also shows that property crime does unnecessarily increase family budget because of the need to provide security gadget to the building (Gibbon, 2004) [14]. Furthermore, property crime especially in the area of violent crime like armed robbery has seldom resulted in loss of lives and less productivity.

Considering the incident of property crime to the residential neighbourhood, it has been found to have negative effect on property investment (Lynch & Rasmussen, 2001) [23]. This is unveiled through negative residential mobility, neighbourhood decline through stigmatization, negative effect on environmental sustainability and general real estate practice. The effect of property crime on government activities include reduced income from property tax, effect of incivility on governance, increase in government budget on procurement and maintenance of community policing and its negative effect on general economy (Pope & Pope, 2012) [29].

Recognising the above incidents of property crime on the urban setting, efforts have been made both in the developed, emerging and developing nations to fashion out sustainable strategies to checkmate the alarming rate of the soaring trend of property crime. However, study show that while the developed and emerging nations are renewing effort through modern techniques towards curbing the menace, most developing nations like Nigeria still dwell principally on the penal system (use of police, court and prison) which researches have proven to be grossly inadequate (Cozens & Love, 2015) [9].

To this end, the primary objective of this study is to propose a Socio-Environmental Design Factors (SEDeF) model as alternative strategy toward residential neighbourhood crime prevention in Nigeria with a view to ensuring safe and secure housing as well as boosting residential property values. The proposed model as shown in figure 1 dwells on the fact that a combination of the social risk factors and environmental design strategies would go a long way in

checkmating residential neighbourhood crime (Sutton, *et.al.*, 2013) [32]. SEDeF is derived from two theories (see Table 1) known as Crime Prevention Social Development (CPSD) which is premised on the belief that crime can be drastically reduced if the fundamental social root causes of crime like poverty, homelessness, illiteracy, unemployment, family disunity, delinquencies and the likes are tenaciously tackled; and Crime Prevention Through Environmental Design (CPTED) which is focused on purposeful manipulation of the environmental neighbourhood design in such a way that it will discourage potential offenders to commit crime. This, which is otherwise called virtual building, is meant to painstakingly address issues like territorial reinforcement, natural surveillance, natural access control, activity support, image/ space management and target hardening (Crowe, 2000, Cozens, 2008) [12, 8].

This report is essentially meant to present the result of a pilot study conducted in this respect which is expected to give way to the research work proper.

Literature Review

Essentially, this paper aims at adopting crime prevention theories as contemporary researches in environmental crime have recommended (Valle̊e, 2010; Sherman, 1997) [33, 31]. Crimes in the urban residential neighbourhoods are characterized and influenced by different factors. First of all, in the developing economy like Nigeria, the degree of rural-urban drift is high due to the concentration of infrastructure, employment opportunities, health services and educational institutions among others in the urban centres. This in turn results in overpopulation culminating to overstretching of limited facilities, unemployment and homelessness. Furthermore, in the developing economies, it is not uncommon to witness unplanned residential neighbourhoods or inability of the local planning authority to control residential developments due mostly to the poor state of the economy. This is usually evident in the absence of approved layout and building plan, an absence of access road network, poor drainages, and deviance to planning regulations. As a matter of fact, when a neighbourhood is not well planned, it makes it easy for offenders to commit a crime unnoticed. This usually results in burglary, theft and a time, rape.

Furthermore, developing nations like Nigeria are usually bedevilled by political recklessness and instability resulting in mass misappropriation of public funds, poverty, unemployment, school-dropout, cum illiteracy, uneven distribution of wealth, homelessness and lawlessness among others. All these have a positive impact on the social and environmental crime risk factors.

In addition, crime at any level and viewed from any angle must have social and psychological underpin. Crime in many cases is seen as an act developed and executed from the mind. This means even when other factors are made suitable, some, especially the youths (through juvenile delinquencies) and some miscreants may still insist in fomenting trouble.

Sequel to the above analysis, it is proposed that the theoretical framework for residential neighbourhood crime in this work shall cut across three (3) main levels as demonstrated in Table 1:

a. Crime Prevention Through Environmental Design (CPTED) – This is expected to address crime caused by poor neighbourhood planning (Mihinjac & Saville, 2019).
b. Crime Opportunity Theories – This is expected to address the sociological and psychological aspects of Crime
c. Crime Prevention Through Social Development (CPSD)-This is expected to address the fundamental root causes of crime which include unemployment, corruption, poor family ties, lack of community integration, poverty and negative peer influence among others (Olajide, Lizam & Adewole, 2015) [26].

A search into the relevant literature has shown that basically the aforementioned three theories – CPTED, CPSD and the Opportunity theories are widely implemented crime prevention approaches. However, the crime opportunity theory basically serves as the threshold to the other two approaches as the principles in opportunity theory tend to guide the operations of CPTED and CPSD.

Table 1: Analysis of the underpinning theories

S/N	Name of Theory	Thrust of Theory	Relevance of Theory	Recent Studies/ Propounder(s)
1.	Crime prevention Through Environmental Design (CPTED)	The theory asserts that 'the proper design and effective use of the built environment can lead to a reduction in the fear and incidence of crime, and an improvement in quality of life'	The theory has been tested to have the capacity of checkmating crime opportunity through building design	*CPTED by Jeffery, 1971 *Defensible Space by Oscar Newman, 1973. *The Broken Windows by Wilson & Kelling, 1982 *CPTED by Crowe, 2000
2.	Crime Prevention Through Social Development (CPSD)	Crime Prevention Through Social Development (CPSD) is an approach or concept that acknowledges the underlying complex social, economic and cultural processes that contribute to crime and victimization. CPSD endeavours to bridge the gap between criminal justice policies and programmes and social support for individuals, families and communities. It does this by tackling the factors that contribute to crime and victimization, and are amendable to change.	This theory is expected to tackle the root causes of crime, that is the social risk factors like poverty, homelessness, illiteracy and others	*Development of Social Model by Hawkin and Weis, 1985. *CPSD by Waller & Wailer, 1985. *Sustainability of CPSD by Hasting, 2008 [16]
3.	Crime Opportunity Theories	These are theories that suggest that offenders make rational choices and thus choose targets that offer a high	These theories are meant to serve as lubricant to the other too that is CPTED and	*Situational crime Prevention by Clarke, 1980 * Lifestyle Theory by Fattah, 1993.

		reward with little effort and risk. The occurrence of a crime depends on two things: the presence of at least one motivated offender who is ready or willing to engage in a crime, and the conditions of the environment in which that offender is situated, to wit, opportunity for crime.	CPSD. Also to address the psychological and social aspects of crime	*Rational Choice Theory by Clarke and Cornish, 1985. *Routine Activity Theory by Cohen & Felson, 1979 *Crime Pattern Theory by Brantingham & Brantingham, 1981.

Source: Authors' Compilation

Methodology

This study is basically centered on reporting the results of the pilot study carried out in respect of the intending research. The foundation to improve the quality and structure of a questionnaire could best be ascertained through effective pilot study (Creswell, 2013; Lodico, et. al. 2006) [10, 22]. In fact, Collins and Hussey (2003) [6] recommended that even what is perceived as best designed questionnaire need to be tested through a pilot study. Piloting in research is seen as a kind of dress rehearsal for a survey. Participants who make up a pilot sample are usually chosen at random and are given the survey to complete but are also asked to examine the survey on many different fronts like clarity of language and terms, basic spelling and grammar, depth and breadth of sub-questions and items, and overall psychometric properties of the instrument. However, scholar recommended an average of 50 respondents as being appropriate for a pilot study (Creswell, 2012) [11]. Therefore, out of 100 sets of questionnaire administered through a self-administered process among the residents (occupiers) of residential estate within the state capitals of South-Western Nigeria of Lagos, Ogun, Oyo, Ondo, Osun and Ekiti States, 50 sets of questionnaire were selected for the purpose of the study. The data collected in the pilot study were statistically analysed with SPSS version 22 to ascertain the Cronbach Alpha as well as the Expository Factor Analysis (EFA).

The study involved data screening which included normality test (the shape of the data distribution to an individual metric variable and its correspondence to the normal distribution which is the benchmark for statistical methods. Pallant, 2011) [28]. In this regard, assessment of skewness and kurtosis statistics were conducted to test for the data's normal distribution as shown in figures 2 to 5. Also, the reliability tests of the main construct were calculated. Reliability is the degree to which research measurement are free from random error and the extent to which a scale used produces consistent result if repeated measurements were made on the variable concerned (Pallant, 2011, 2020) [28, 27]. This implies that reliability and error are related and that the larger the error, the smaller the reliability of the research measurement and vice versa. As a result, Cronbach Alpha used to estimate the extent to which the items in the questionnaire scale are representative of the domain of the construct being measured. It is a measure of internal consistency of the set of items, and it considered absolutely the first measure researcher should use to assess the reliability of the measurement scale (Cronbach, 1951) cited in Awang (2014) [1]. Therefore, this research internal reliability of the measurement achieved as the Cronbach Alpha ranged from 0.76 to 0.84 as shown in Table 3. In a nutshell, Hair, et. al. (2010) recommended that the internal consistency method with a cut off criterion of Cronbach Alpha of 0.60 and above is sufficient in assessing the reliability of the research instrument.

As touching the validity test, Creswell (2012) [11] posited that the capacity of an instrument to measure what is presumed to be measured for the construct is referred to as validity. Hair, et. al. (2011) [15] noted that validity of an instrument is vital because reliability test alone is not enough to substantiate the adequacy of the research instrument of measurement. For the purpose of this study, the content and construct validities were achieved through survey instrument employed and adapted from the established measurement items in the past literature, research studies and experience of research experts in the field of residential neighbourhood crime prevention. The research type is quantitative which is built on the research philosophy of positivism research approach. A positivism research approach is generally acknowledged as a scientific approach and it forms the foundation of natural science and then influenced social sciences scholars as a rational approach to research.

For the purpose of questionnaire development of the research instrument, the use of five (5) point Likert scale was used. Likert scale is proposed because of the anticipated method of data analysis (that is, Structural Equation Modeling SEM) as prescribed by Awang, (2014) [1] due to the fact that most of the questions have to do with attitudinal and perceptional opinions of people (unobserved data) which are usually prone to error. He recommends between 5-10 Likert scale for any of this kind but studies have shown that use of too long Likert scale could be boring and time consuming to the respondents as well as on the part of the researcher makes coding and other computations too cumbersome (Pallant, 2011; Creswell, 2012) [28, 11]. In addition to this, Johns (2010) [20] posited that when response scale is below 5 points, the response becomes significantly inaccurate because it will be measuring only direction instead of the magnitude. Similarly according to him, scales above five (5) points usually pose difficulty of making distinction between the scale to respondents, 5-likert scale was used for this research.

For the purpose of this research, both purposive (use of professionals that are vast in the issues of the research as enumerated under the types of respondent as well as heads of household) and systematic sampling techniques in that a distinction between low and high density estates were employed (Sakip *et al.* 2012) [30], using unbiased parameters, the samples were chosen within the low and high densities as well as having regards to private and public estates.

According to Vanderstoep and Johnson (2009) [34], determining sample size is a very important issue because samples that are too large may waste time, resources and money, while samples that are too small may lead to inaccurate results. In this case, one can easily determine the minimum sample size needed to estimate a process parameter, such as the population mean. However, in line with the proposed method of analysis, Structural Equation

Modeling and quality of the degree intended, a sample of not less than four hundred (400) is proposed. According to Awang (2014) [1], this is considered adequate.

Data Analysis and Presentation

With reference to the proposed Assessment Framework as shown in Figure 1, the necessary analyses were carried out which include Descriptive statistics, Reliability test, Normality test and the Exploratory Factor Analysis (EFA). The analyses were based on the Demographic number of questionnaire adopted for the analysis is 50. The model (SEDeF) is proposed with two independent variables (social risk factors and environmental design factors) which are to be measured (in terms of impact) against the dependent variable (Residential Neighbourhood Crime, RNC). From this path diagram two hypotheses are expected to be tested. These include measuring the influence of the social risk factors (SRF) on residential neighbourhood crime (RNC) as well as the relationship between environmental design factors (EDF) on residential neighbourhood crime. Furthermore, the model is designed to measure the impact of residential neighbourhood crime on property values. Hence, the third hypothesis is hereby formulated which measures the impact of residential neighbourhood crime (RNC) on residential property values (RPV). Here, the RNC now stands as the independent variable while the property value stands as the dependent variable. However, in the overall model the RNC can also be described as a moderating variable.

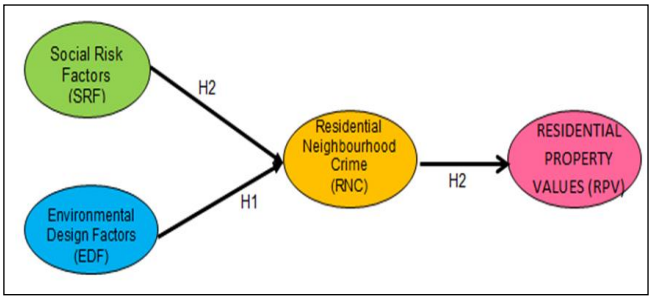

Fig 1: The proposed research assessment model (socio-environmental design factors (SEDeF) model

1. Research Variables Descriptive Analysis

The Table 2 gives a descriptive analysis of all the variables both demographic and the latent constructs for the purpose of data screening.

Table 2: Descriptive Statistics

Item Descriptions	N	Min.	Max.	Sum	M	SD
Neighbourhood Density	50	1	3	82	1.64	.693
House type	50	1	5	92	1.84	1.037
Age	50	1	5	194	3.88	.918
Gender	50	1	2	59	1.18	.388
Educational level	50	2	5	208	4.16	.548
Status of respondents	50	1	6	97	1.94	.682
Occupation	50	2	5	183	3.66	.772
Income	50	1	5	174	3.48	1.297
Rental value	50	1	4	88	1.76	.716
Building capital value	50	2	4	114	2.28	.497
Type of security	50	1	4	145	2.90	1.035
Fencing of building	50	1	3	138	2.76	.657
Community additional security	50	1	6	105	2.10	1.418
Homelessness and crime	50	1	5	170	3.40	.969
Illiteracy and crime	50	1	5	161	3.22	.840
Unemployment and crime	50	2	5	217	4.34	.717
Wrong pier group and crime	50	2	5	200	4.00	.782
Family disintegration and crime	50	1	5	164	3.28	.882
Socio-development neglect and crime	50	1	5	164	3.28	.927
Poverty and crime	50	3	5	217	4.34	.593
Gated Community and fencing	50	2	5	189	3.78	.737
Environmental Cleaning	50	2	5	159	3.18	.748
Community Integration	50	2	5	200	4.00	.728
Controlled Neighbourhood Layout	50	2	5	174	3.48	.646
Surveillance and Lighting	50	2	5	209	4.18	.661
Police Patrol and physical Barrier	50	1	5	205	4.10	.886
Obstruction to target area	50	1	5	157	3.14	.904
Use of CCTV	50	1	5	145	2.90	.974
Response to social needs	50	1	5	180	3.60	.782
Good Environmental Design	50	2	5	185	3.70	.763
Intensive effort to reduce crime	50	3	5	206	4.12	.594
Blocking crime opportunities	50	3	5	200	4.00	.728
Influence of RNC on Residential Development	50	3	5	216	4.32	.587
Importance of physical security	50	3	5	215	4.30	.678
Public perception on residential security	50	2	5	159	3.18	.691
Community Integration and RNC	50	3	5	202	4.04	.669
Socio-economic status of residents	50	1	5	158	3.16	1.017
Environmental maintenance and crime	50	3	5	206	4.12	.521
Neighbourhood security and property values	50	3	5	215	4.30	.707

Police Security and Property value	50	2	5	198	3.96	.699
Less security Attracts low profit	50	2	5	165	3.30	.763
Fence, wall & gate influence property value	50	2	5	175	3.50	.735
Need for rebate in less secured estates	50	1	5	166	3.32	.978
Secured areas command higher value	50	3	5	203	4.06	.620
Crime impacts on property value	50	3	5	216	4.32	.653
Valid N (listwise)	50					

2. Summary of Research Variables Test of Reliability

Table 3: Synopsis of Research Variables' Reliability Test

Constructs	No. of Items	Cronbach Value
Social Risk Factors	7	0.780
Environmental Design Factors	8	0.844
Residential Neighbourhood Crime	10	0.837
Residential Property Value	7	0.756

Table 3 shows that this research internal reliability of the measurement achieved as the Cronbach Alpha ranged from 0.75 to 0.84. This is within the acceptable measurement fitness index of 0.6.

3. Research Variables Test of Normality

The research variables' normality test was conducted after the transformation of each variable in the research assessment framework/model. Table 4 presented the outcome of research variables test of normality based on their skewness and Kurtosis values respectively. Pallant (2011) [28] and Kline (2011) [21] stated that the skewness and Kurtosis values should be within a range of ± 1.0 before it could be considered satisfactory. Therefore, it can be safely concluded that the Normality test of the Variables in this research were satisfactory and acceptable.

Table 4: Research Variables' Normality Test

	N	Min	Max.	Sum	Mean	SD	Skewness		Kurtosis	
SRF	50	2.57	4.71	172.14	3.4429	.50672	.517	.337	-.134	.662
EDF	50	1.63	4.63	162.75	3.2550	.61235	-.204	.337	.688	.662
RNC	50	2.10	4.80	175.20	3.5040	.51029	-.001	.337	.567	.662
RPV	50	2.57	4.86	181.00	3.6200	.52160	.020	.337	-.629	.662

In addition, Figures 2 to 5 presented the Q-Q plot for the entire research constructs. The result indicated that the scale of assessment for the entire variables formed a normal distribution pattern because entire cases apparently fall within a diagonal straight line as presented in the figures (see Figures 2 to 5). Hence, Table 4 presented synopsis of the research constructs' normality test and number of items used for the scale of measurement.

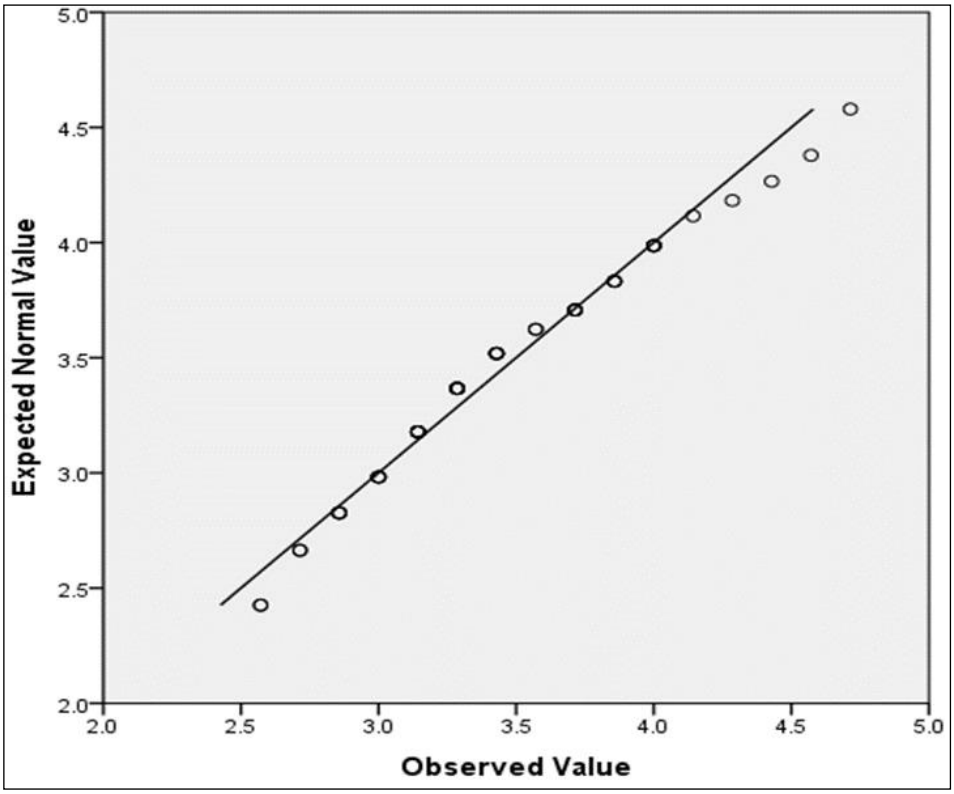

Fig 2: Normality Q – Q Plot for Social Risk Factors (SRF) Construct

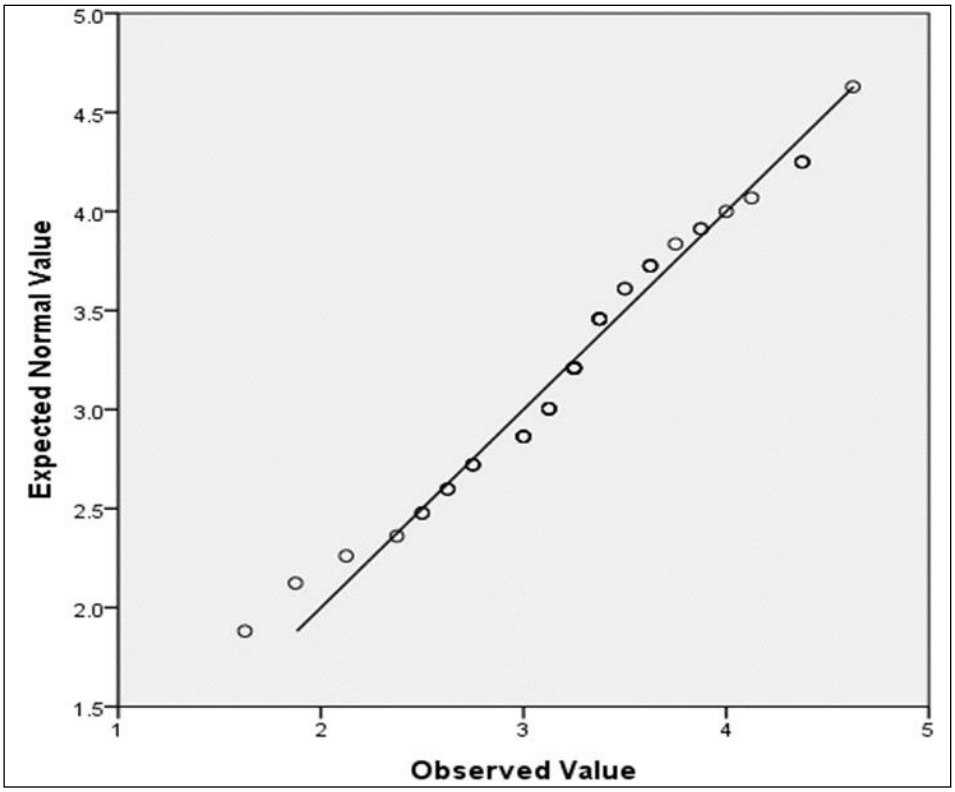

Fig 3: Normality Q – Q Plot for Environmental Design Factors (EDF) Construct

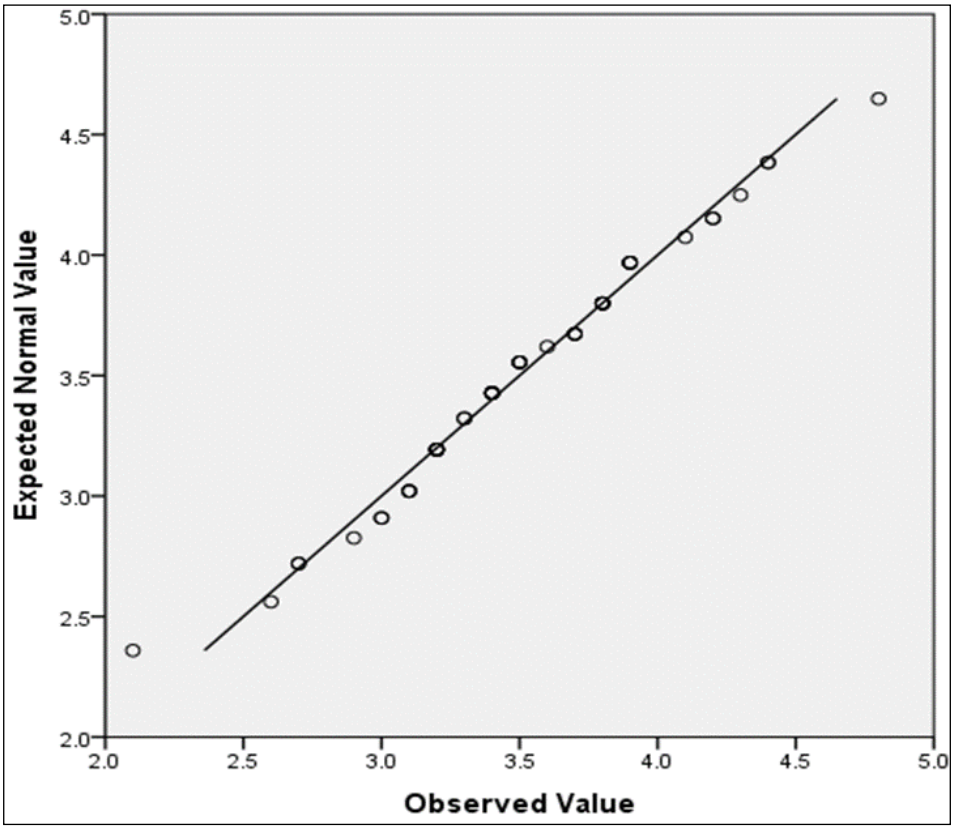

Fig 4: Normality Q – Q Plot for Residential Neighbourhood Crime (RNC) Construct

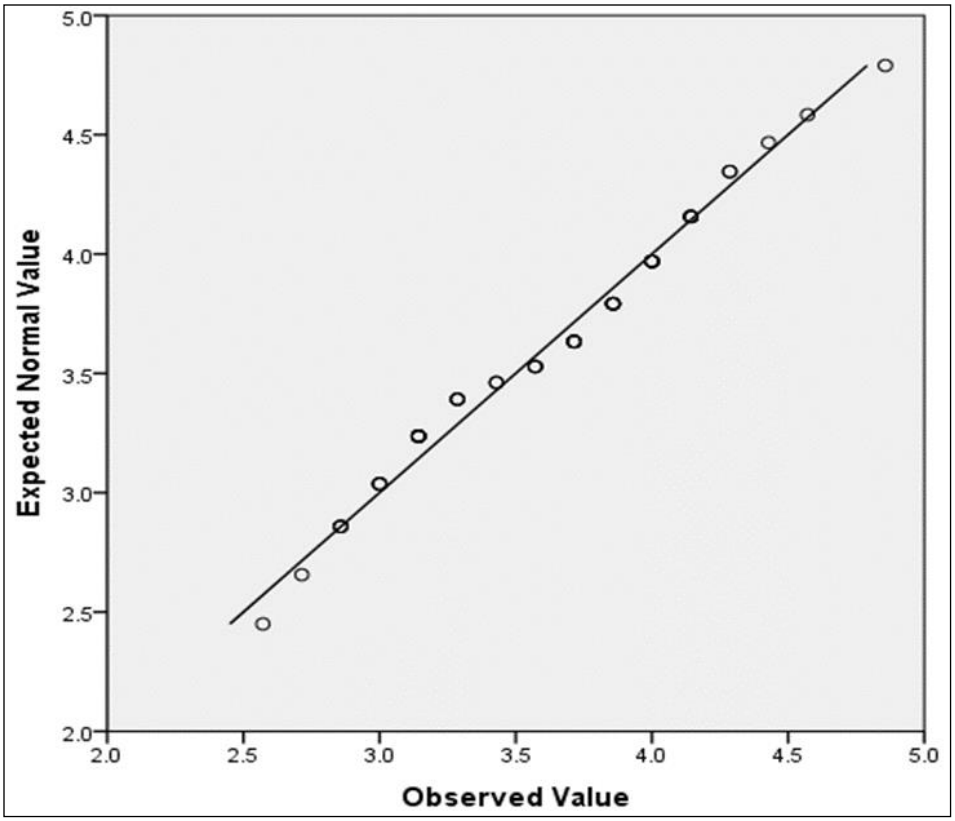

Fig 5: Normality Q – Q Plot for Residential Property Value (RPV) Construct

Table 5: Synopsis of Research Constructs' Normality Test

Constructs	No. of Items	Skewness Scores	Kurtosis Scores
Social Risk Factors	7	0.517	-0.134
Environmental Design Factors	8	-0.204	0.688
Residential Neighbourhood Crime	10	-0.001	0.567
Residential Property Value	7	0.020	-0.629

4. Exploratory Factor Analysis

4.1 Research Variables Total Variance Explained

Table 6: Total Variance Explained for Research Variables

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	6.127	19.147	19.147	6.127	19.147	19.147	4.939	15.435	15.435
2	4.603	14.385	33.532	4.603	14.385	33.532	4.471	13.971	29.406
3	3.898	12.182	45.714	3.898	12.182	45.714	4.046	12.643	42.049
4	3.252	10.162	55.876	3.252	10.162	55.876	3.886	12.144	54.193
5	1.962	6.131	62.007	1.962	6.131	62.007	1.735	5.423	59.616
6	1.565	4.890	66.897	1.565	4.890	66.897	1.513	4.728	64.344
7	1.280	4.001	70.898	1.280	4.001	70.898	1.510	4.717	69.061
8	1.172	3.664	74.562	1.172	3.664	74.562	1.447	4.521	73.582
9	1.068	3.338	77.900	1.068	3.338	77.900	1.382	4.317	77.900
10	.955	2.985	80.885						
11	.767	2.397	83.282						
12	.698	2.180	85.462						
13	.654	2.044	87.506						
14	.595	1.860	89.366						
15	.494	1.543	90.909						
16	.457	1.429	92.339						
17	.371	1.159	93.498						
18	.342	1.068	94.565						
19	.312	.975	95.541						
20	.301	.940	96.480						
21	.224	.699	97.179						

22	.178	.558	97.737						
23	.147	.460	98.197						
24	.136	.426	98.623						
25	.102	.320	98.943						
26	.077	.242	99.185						
27	.071	.222	99.407						
28	.057	.179	99.586						
29	.045	.139	99.726						
30	.036	.113	99.838						
31	.028	.086	99.925						
32	.024	.075	100.000						

Extraction Method: Principal Component Analysis

4.2 Research Variables Rotated Component Matrix

Table 7: Rotated Component matrix for the Research Construct

	Components			
	1	**2**	**3**	**4**
Homelessness and crime	.749			
Illiteracy and crime	.916			
Unemployment and crime	.771			
Wrong pier group and crime	.602			
Family disintegration and crime	.803			
Socio-development neglect and crime	.459			
Poverty and crime	.872			
Gated Community and fencing		.829		
Environmental Cleaning		.901		
Community Integration		.847		
Controlled Neighbourhood Layout		.878		
Surveillance and Lighting		.828		
Police Patrol and physical Barrier		.830		
Obstruction to target area		.650		
Use of CCTV		.897		
Response to social needs			.693	
Good Environmental Design			.684	
Intensive effort to reduce crime			.849	
Blocking crime opportunities			.706	
Influence of RNC on Residential Development			.851	
Importance of physical security			.892	
Public perception on residential security			.728	
Community Integration and RNC			.673	
Socio-economic status of residents			.608	
Environmental maintenance and crime			.940	
Neighbourhood security and property values				.835
Police Security and Property value				.569
Less security Attracts low profit				.741
Fence, wall & gate influence property value				.921
Need for rebate in less secured estates				.623
Secured areas command higher value				.872
Crime impacts on property value				.843

Table 8: KMO and Bartlett's Test for the Research Construct

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy		**0.655**
Bartlett's Test of Sphericity	Approx. Chi-Square	1172.922
	df	496
	Sig.	.000

Result of Findings

Bearing in mind the intention of this study, that is, to report the results of the pilot study carried out in relation to the public perception of the desirability of the adoption of the Socio-Environmental Design Factor (SEDeF) model as a veritable residential neighbourhood crime prevention strategy. The necessary tests were conducted with the use of SPSS, version 22 software. The necessary tests as recommended by Pallant (2011) [28] include the descriptive statistics which is meant for data screening and cleaning and cleaning in order to eliminate missing data; the reliability test of the latent constructs which measures the internal consistency of the instrument; the normality tests of the constructs which measures the pattern of responses of the respondents to the questions and the expository factor analysis which is multivariate statistical technique used to

analyse the research data in order to provide information about the range of factors that best represent the data (Awang, 2014) [1].

For the reliability test, according to Pallant (2011) [28], cronbach's alpha values above 0.6 are considered appropriate which translate to the fact that the cronbach's alpha of the latent construct which range between 0.76 to 0.84 are appropriate. For the normality test, Pallant (2011) [28] also recommended that skewnness and kurtosis value of -2 to +2 are considered as symmetry distribution which are suitable for parametric tests presume a normal distribution. The study in question can be said to be normally distributed as all values fall within the goodness-of-fit index (see table 4). Considering the exploratory factor analysis (EFA), the Corrected Item-Total Correlation of the items in the research constructs was explored basically to know the degree to which each item correlates with the total score value. Pallant (2011) [28] recommended that score value less than 0.3 is an indication that the subject item is measuring something different from the scale as a whole. The 45 items in the constructs were subjected to exploratory factor analysis of which the values ranged between 0.5 to 0.94. These were seen to be satisfactory (see Table 7). In addition, Kaiser Meyer-Olkin value score was 0.66 (Table 8) which exceeded the recommended value of 0.6 by Kaiser (1970) cited in Pallant, (2011) [28]. Hence, the Bertlett's Test of Sphericity reached statistical significance, supporting the factorability of the correlation matrix. The Total Variance Explained for Research Variables (Table 6) which also dwells on the dependability of the instrument gives the value of 77.9% which considered adequate (Pallant, 2011) [28].

Conclusion

From the above findings, effort has been made to test the veracity of the instruments set out for the research. So far so good, the results are good indication that the internal consistency of questionnaire match up with the fitness index as well as the suitability of the construct and content validity. Also, the descriptive statistics showed appreciative data screening as it is devoid of missing data. The result of the Exploratory Factor Analysis (EFA) also presented a dependable result of factor loadings all above 0.50 and cumulative percentage of the Rotation Sums of Squared Loadings in the region of 77.90% as well as the KMO Measure of Sampling Adequacy of 0.66 (Tables 6,7 & 8). The general result therefore is an indication that the main research process could commence. At the end of the main research, respondents' perception of the applicability of the model would be determined which in turn will give rise to its acceptability or otherwise. The model is expected to enhance housing sustainability in the area of residential neighbourhood crime prevention.

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