

Volume 2, Number 1, June 2020

Journal of Environmental Technology



School of Environmental Technology,
The Federal University of Technology,
Akure, Nigeria.
ISSN: 978-055-490-4

Journal of
Environmental Technology

Publication of
School of Environmental Technology,
The Federal University of Technology, Akure, Nigeria.

Volume 2 Number 1

Aim and Scope

The Journal of Environmental Technology (SetJet) is published by the School of Environmental Technology (SET), The Federal University of Technology, (FUTA) Akure, Nigeria is a multi-disciplinary, double blind, peer-reviewed journal committed to the advancement of the frontiers of knowledge through the publication of basic and applied research in the field of Environmental Science, Technology and Management. SetJet is published twice in a year (June and November), and its scope includes Architecture, Building, Civil Engineering, Estate Management, Environmental Conservation and Management, Fine Art, Industrial Design, Project Management, Quantity Surveying, Surveying and Geoinformatics, Urban and Regional Planning as well as other allied disciplines.

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Editor-in-Chief,
Journal of Environmental Technology,
Dean's Office, School of Environmental Technology
The Federal University of Technology
PMB 704, Akure, Nigeria
ofkayode@futa.edu.ng or setjet@futa.edu.ng

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Cover Design by Femi Kayode, PhD

Volume 2, Number 1, June 2020
Volume 2, Number 2, November 2020
ISSN: 978-055-490-4

Published by:

School of Environmental Technology,
The Federal University of Technology,
P. M. B. 704, Akure, Nigeria.

Printed by:

Juaainchrist Printers & Publishers, 0803 292 2496

Editorial

Publication of
School of Environmental Technology
The Federal University of Technology, Akure, Nigeria.

The Journal of Environmental Technology (SetJet) is published by the School of Environmental Technology of the Federal University of Technology, Akure, Nigeria. It is a multi-disciplinary journal committed to the advancement of the frontiers of knowledge through the publication of basic and applied research. The journal offers a vehicle for effective communication and intellectual exchange among academics and intelligentsia in general.

SetJet was first published in 2002 to provide an outlet for scholars and professionals in the built environment to disseminate their research findings. It publishes well-researched and synthesized manuscripts in all fields of environmental studies. It is published twice in a year (June and November), and its scope includes the following disciplines: Architecture, Building, Estate Management, Fine Art, Industrial Design, Land Surveying, Urban and Regional Planning, Geography, Economics, Quantity Surveying, Surveying and Geoinformatics, Transportation Planning and Management.

The Journal of Environment Technology is a fully refereed journal that provides an international forum for research and critical reviews in the broad field of environmental studies. The central focus of the journal is on the integrated planning, design and management of the built environment. It encompasses applied research, application of new

paradigms, and the evaluation of policies in all the principal disciplines in the built environment.

The Journal therefore deals with environmental issues such as: Urban design; property development and management; infrastructure and facility provision management; housing and residential development; it also includes the functional and aesthetics relevance of Arts and Industrial Design to built environment. Cost and quantification in the built environment; urban regeneration and city centre revitalization; gender and urban development; transportation; and all such-like issues.

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Olufemi F. Kayode
Editor-in-Chief.

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Analysis of Factors Influencing Neighbourhood Ties Among Residences in Minna, Niger State.

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Key Words

Neighbourhood ties, quality of life,
community engagement, neighbourhood
sustainability, influencing factors

Abstract

Neighbourhood ties is a concept that has received considerable interest recently due to its Probability of reducing insecurity, enhance community life, togetherness, and quality of life. Neighbourhood ties to some extent is a slippery concept and complex to quantify but can be measured by the strength of its influencing factors such as the degree to which people interact, trust one another and feeling of commitment. This study therefore assesses factors that influence neighbourhood ties in Minna. The study employed quantitative approach using structured questionnaire. A total of 420 residences were randomly sampled from eight (8) neighbourhoods in Minna. Exploratory Factor Analysis (EFA) was used to examine the factors that influence neighbourhood ties among residents. The study found that five out of the six (6) factors examined influence neighbourhood ties in Minna. These factors were sense of community, sense of belonging, neighbourliness, access to facilities/services and community engagement. The five factors have Eigenvalue >1 and contributed a total of 74.71% cumulative variance, each factor achieved level of reliability determined by the Cronbach's Alpha value >0.70. Sense of community (0.93), sense of belonging (0.89), neighbourliness (0.85), access to facilities/services (0.84) and community engagement (0.71). This study suggests that these factors determined by EFA have demonstrated a good reliability to assess neighbourhood ties among residents towards sustainable neighbourhood's development in Minna.

Introduction

Neighbourhoods present opportunities for people to live together from various cultures, social and ethnic backgrounds.

Yet in contemporary urban neighbourhoods such interactions are vanishing due to socio-economic status, population change, physical segregation, access to facilities and services, ethnic diversity, sense of identity and belonging (Bhakti, 2017; Centre for Local Economic Strategies, 2014). Neighbourhood plays an essential role in social life as it is a central context through which social networks are both formed and maintained.

According to ,neighbourhood studies have shown that communities with highneighbourhood ties are more likely to engage in neighbourly acts, express willingness to cooperate, participate in community organizations and in local affairs, make physical improvements, fight crime and operate social programs. Residents in such neighbourhood have feelings of satisfaction with life and are more likely to think of their neighbourhood as a community. They are also inclined to identify neighbours by name, have friends and relatives living nearby and be long-time residents. Home owners wholive in the neighbourhood for a number of years have also been found to have high neighbouring ties .

Indeed, many of theties are developed and nurtured in neighbourhoods . Neighbourhood tiesare important in fostering unity(Browning *et al*, 2017). When residents feel connected to each other, they work together to resolve local problems.Lack of neighbourhood ties occurs when there are divisions between social groups, individuals and communities. Lack of neighbourhood ties limits the capacity of neighbourhoods to regulate and control behaviour. This study therefore, assesses the factors that influence neighbourhood ties among residents in Minna.

Concept of Neighbourhood Ties

Neighbourhood ties is an evolving concept, that is subject to multiple meanings. The concept of neighbourhood ties is viewed as a characteristic of society dealing with the connections and

relations between societal units such as individuals, groups and associations as well as territorial units. The sociologist Emile Durkheim, was the first to use the concept. He considered it as an ordering feature of a society and defined it as the interdependence and solidarity between members of a society. As noted by the Australian Bureau of Statistics (2004), neighbourhood ties refer to the social and community commitments that bind people together. Council of Europe (2008), defined neighbourhood ties as the capacity of a society to ensure the well-being of all its members, minimizing disparities and avoiding marginalization. The broad definition of neighbourhood ties set out by the United Kingdom Local Government Association, is one that promotes common vision and a sense of belonging, appreciation of diversity of backgrounds and circumstances, similar life opportunities for all people not dependent on background, community where strong relationships can be developed between people from diverse backgrounds.

The definitions have brought to fore some challenges that have thrown up a number of conceptualizations or adoption of neighbourhood ties as contributory unified factors to society. These generally include features that are related to individual behaviours and social attitudes, which comprise of established

characteristics of communities that are known to be obligatory for cohesive society. The societal attitudes and behaviours that are commonly invoked include, having a sense of belonging that translates or give semblance of common identity (these includes national identity, absence of impunity, respect for the rule of law and inclusiveness); ability to tolerance and respect individual's feelings and opinions, tribes, race, culture, religions and avoidance of culture of impunity in the system, Presence of mutual trust and confidence in other individuals that could booster inter-personal and institutional trust, having a somewhat civic co-operation, provision of good governance and eradication of corruption, an active participation in matters of national interest and respect for the constitution by abiding and respecting law (so as to ensure a significantly low or absence of crime in the society).

Factors of Neighbourhood Ties

Factors of Neighbourhood ties have been identified in recent studies. These are factors that measure whether people get on well together, share common vision and sense of belonging, appreciate diversity and have strong, positive relationships. Table 1 presents summary of the factors that influence neighbourhood ties from different studies.

Table 1: Factors Influencing Neighbourhood Ties by Different Studies

Authors	Factors	Descriptions
Burke and Hulse (2002)	Sense of community	The degree to which people feel being part of the community
	Sense of belonging	This includes having close friends/family living in the neighbourhood, keeping abreast of neighbourhood issues
	Access to facilities/services	Provision of schools, local parks and other services
Guest <i>et al</i> (2006)	Neighbour Interaction	This reflects the extent to which residents in the area interact with one another in a variety of ways including having lunch or dinner with a neighbour, share tools or having helped a neighbour with a problem, and watching neighbour's property.
	Sense of community	Participating in neighbourhood activity and belonging to a neighbourhood watch.
	Sense of belonging	Familiar with others who live nearby, regardless of whether they interact and knowing people on the block and people knowing me in the block/neighbourhood
Holdsworth & Hartman (2009)	Neighbourliness	This includes having high level of interaction with neighbours, friends and family, An ethic of care (offering support and help).
	Mutual respect	This includes observing boundaries, acceptance of diversity, community consultation, ownership and Sense of pride

Community engagement	This includes volunteering and attendance at community events.	
Perception of safety	Low official crime rate, Residents' expression of feeling safe.	
Access to resources	Adequate service provision, Built environment.	
Centre for Local Economic Strategies (CLES, 2014)	Socio economic attributes	Comprises of age limit, marital status, educational qualification, type of occupation, income.
	Sense of identify and belonging	Knowing strangers in the neighbourhood and knowing people around the neighbourhood
	Access to facilities and services	Availability and uses of facilities, services and spaces for leisure and socialising.
	Kinship and friendship	People bond with one other in the area

Research Methodology

The Study Area

Minna is a metropolitan settlement located between latitude 9°24'N and 9°48'North and longitude 6°25'E and 6°45'East. Minna is the administrative capital of Niger State. It is about 120km away from the Federal Capital Territory, Abuja through the F126 Minna-Suleja road. Minna is a large metropolitan area with a population of 317, 465 National

Population Commission (NPC, 2006). The land mass size is about 6,784 square kilometres encompassing of residential neighbourhoods and political wards. Minna has twenty six (26) neighbourhoods that were identified on the basis of population density, environmental qualities and other socio-economic attributes. Minna neighbourhoods are classified into three densities (low, medium and high). Figure 1 shows the location of Minna and neighbourhood densities.

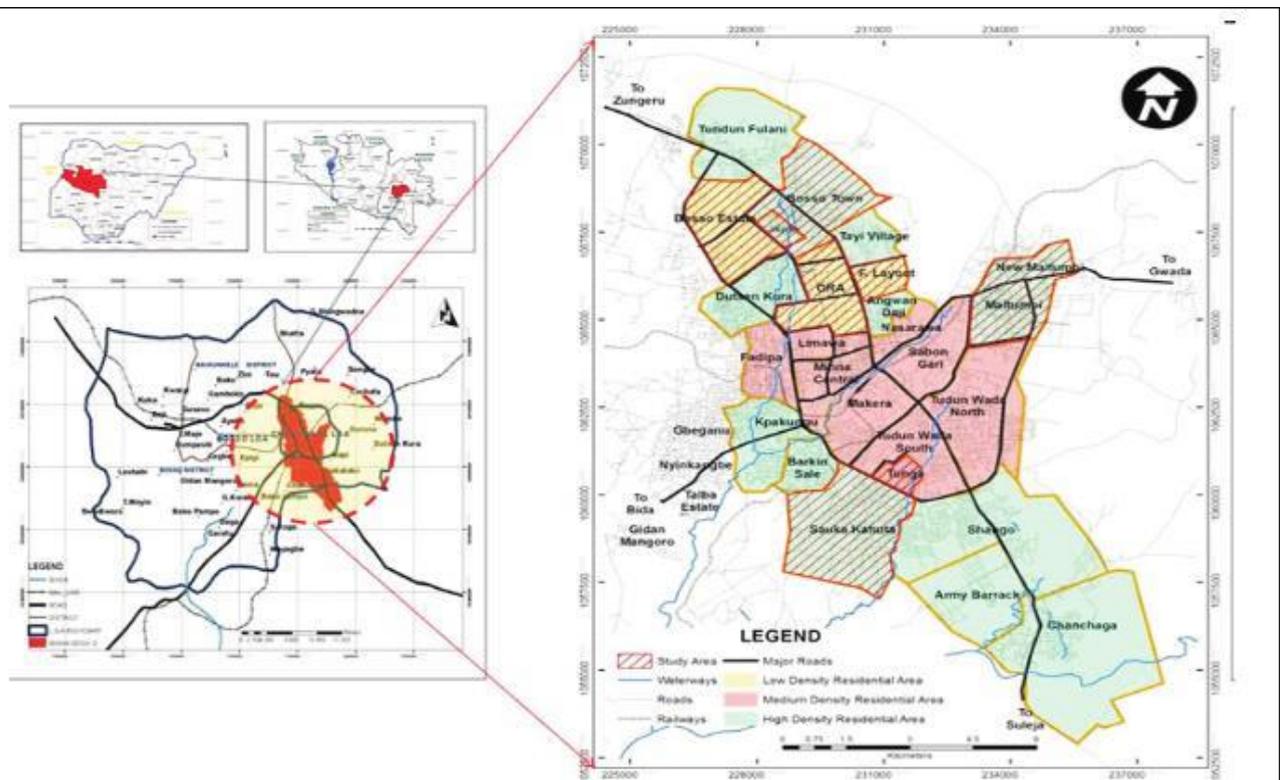


Figure 1:Map of Minna showing Neighbourhoods and the Study Area

Source: Author's Fieldwork, 2020

Quantitative approach which involves a structured questionnaire was used to obtain primary data on factors that influence neighbourhood ties from residences in selected neighbourhoods using a cross-sectional survey study. Data were collected from residents (n = 420) of the 8 selected neighbourhoods using stratified random sampling out of

twenty-six (26) neighbourhoods in Minna based on densities (Low, Medium and High). The selected neighbourhoods include Bosso Town, Jikpan, Maitumbi (High densities), Sauka Kahuta, Tunga (Medium densities), Bosso Estate, F-Layout and GRA (Low densities).

Table 2: Distribution of Sample Size (n)

S/N	Neighbourhoods	Density	Estimated Household size in each Neighbourhood	Sample size (n)
1	Bosso Town	High	11,360	208
2	SaukaKahuta	High	1,107	20
3	Maitumbi	High	4,604	84
4	Tunga	Medium	1,682	31
5	Jikpan	Medium	151	3
6	Bosso Estate	Low	1,682	31
7	F-Layout	Low	1,711	31
8	GRA	Low	667	12
Total			22,964	420

Source: Author, 2020.

Measurable Factors/Items

A total of Six (6) factors that influence neighbourhood ties with twenty-seven (27) measurable items identified in the literature were considered for the study (Table 2). These include sense of community and was measured using nine (9) items, sense of belonging (3 items), community engagement (3 items), neighbourliness (3 items), socio-economic attribute (6 items)

and access to facilities /services (3 items). Categorical response for each item ranged from 1 (strongly disagree) to 7 (Strongly agree). Demographic characteristics measured in the study that were used in this analysis included age, marital status, education qualification occupation, income, and length of stay in the neighbourhood.

Table 3: Measurable Factors/Items Used in the Analysis

Factors	Items
Sense of Community	1. I look after my neighbour's children/properties when they are not around.
	2. I value my neighbour/people view/comments in this neighbourhood.
	3. When there are problems in this neighbourhood they are solved by the people.
	4. I am happy living among people in this neighbourhood.
	5. People in this neighbourhood always share important events such as birthday parties, weddings, and festivals.
	6. People in this neighbourhood care about each other.
	7. I really feel that I am part of this neighbourhood.
	8. I can trust the people in this neighbourhood.
	9. I feel this neighbourhood is good to live in.
Sense of Belonging	1. I can identify most of the people in this neighbourhood.
	2. Most of the people in this neighbourhood knows me.
	3. I always participate in activities in this neighbourhood.

Community engagement	<ol style="list-style-type: none"> 1. I belong to a group/clubs in this neighbourhood. 2. I attend events in this neighbourhood. 3. I do voluntary work in this neighbourhood.
Neighbourliness	<ol style="list-style-type: none"> 1. I interact with my neighbours. 2. I visit my neighbours. 3. I offer support/help to my neighbours.
Socio-Economic attribute	<ol style="list-style-type: none"> 1. Age limit. 2. Marital status. 3. Educational qualification. 4. Type of occupation. 5. Income status. 6. Length of stay in the neighbourhood.
Access to facilities/services	<ol style="list-style-type: none"> 1. This neighbourhood is planned and well layout. 2. There are available facilities/services in this neighbourhood. 3. I use these facilities/services in this neighbourhood.

Source: Author, 2020

Data Analysis

Data management and descriptive statistics and Exploratory Factor Analysis (EFA) were conducted in SPSS 24.0. Exploratory Factor Analysis (EFA) was employed because it is often used in research to explain a large number of measured variables (survey items) with a small number of underlying factors (latent variables) (Maskey & Nguyen, 2018). Due to inconsistent factor structure findings and limited investigations among measure of neighbourhood ties in the existing literatures, an EFA was employed to establish factors influencing neighbourhood ties in Minna. Several studies provide details about methodological decision criteria involved in exploratory factor analysis, such as checking the appropriateness of the data for EFA (Kaiser-Meyer-Olkin and Bartlett's test of sphericity), rotation (e.g. Varimax or Promax), factor extraction/retention criterion, cut-off value for acceptable factor loadings and the suitable percent variance explained (Maskey & Nguyen, 2018; Osborne & Costello, 2009). The EFA was conducted using promax rotation to determine the appropriate number of factors to retain the criteria described by DeVellis (2016). The criteria is to retain all the factors with Eigenvalues ≥ 1 and ignore factors with eigenvalue < 1 (Kaiser Criterion). Retention of factor loading carried out was according to the rule of thumb that if a loading is > 0.3 , the item is relevant for the particular factor. Therefore, the study adopted > 0.4 as its threshold for retaining factor loading.

Results And Discussion

Factors Influencing Neighbourhood Ties in Minna

First, the Kaiser-Meyer Olkin (KMO) and Bartlett's Test of Sphericity were carried out to measure sample adequacy for each item, and the strength of the relationships among the items and

the significant level required in performing further analysis with the factors. The KMO returns values between 0 to 1 (Hair *et al*, 2010). Table 4 shows the KMO value as 0.874 and significant value 0.000 for Bartlett's Test of Sphericity. The KMO was assessed using the recommended acceptable value by Tabachnick & Fidell (2014), that it must have a minimum value of 0.5 to indicate the sample is adequate and Bartlett's test of sphericity is significant at ($p < 0.005$). Thus, the two tests for the study indicate that the sample was adequate and could be considered for further analysis.

Table 4: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.874
Bartlett's Test of Sphericity	Approx. Chi-Square	6770.221
	df	210
	Sig.	0.000

Source: Author's Analysis of Data, 2020

Maximum likelihood extraction method and promax rotation method were conducted on 27 items to extract possible factors that influence neighbourhood ties in Minna. The maximum likelihood extraction method was used because it is the most popular estimation method in EFA, it allows for the computation of a wide range of indexes of the goodness of fit and it permits statistical significance testing of factor loadings, while the promax rotation method allows factors to be correlated and also calculate a large set of data quickly.

The Kaiser's Criterion approach (Eigenvalue > 1) was used to determine which factors to be retained. Five (5) factors having Eigenvalue > 1 was extracted from the 27 items, the five factors

after rotation became factor 1, 2, 3, 4 and 5. Retention of factor loading carried out was according to Tabachnick & Fidell (2014); Field (2013) that suggested factor loadings <0.3 should be suppressed and retained factors with at least three items with loading >0.4. These items should not cross load highly on other factors. Therefore, the process was re-run repeatedly after eliminating items that had loading <0.4.

Table 5 shows the EFA analysis, it presents factor loading of the items together with their percentage of variance explained by each of the factors and cumulative variance. **From the table** factor 1 comprising of 8 items explained 39.14% of the variance

with factor loadings from 0.995 to 0.436, factor 2 comprising of 4 items explained 13.99% of the variance with factor loadings range from 0.992 to 0.514, While factor 3, 4 and 5 comprising of 3 items each explained 9.85%, 6.43% and 5.44% of the variance with factor loadings >0.4 respectively, given a total cumulative variance of 74.71% which fall with the acceptable criteria (50%-80%) of the total variance explained (Hair *et al.*, 2012). The indicators that load on the 4 factors appeared sufficient to explain the factors that influence neighbourhood ties among residences in Minna.

Table 5: Value Loading on Factors

Items	Factors				
	1	2	3	4	5
I visit my neighbours	0.995				
Age limit	0.989				
I interact with my neighbours	0.889				
I offer support/help to my neighbours	0.804				
Whenever there are problems in this neighbourhood, they are solved by the people	0.673				
I look after my neighbour's children/properties when they are not around	0.502				
People in this neighbourhood care about each other	0.501				
People in this neighbourhood always share important events such as birthday parties, weddings, festivals	0.436	0.331			
Marital Status		0.952			
I am happy living among people in this neighbourhood		0.951			
I feel this neighbourhood is good to live in	0.331	0.534			
I really feel that I am part of this neighbourhood		0.514			
I can identify most of the people in this neighbourhood			1.034		
Length of stay in the neighbourhood			0.892		
Most of the people in this neighbourhood knows me			0.475		
There are available facilities/services in this neighbourhood				0.907	
I use these facilities/services in this neighbourhood				0.890	
This neighbourhood is planned and well layout				0.648	
I do voluntary work in this neighbourhood					0.767
I belong to a groups/clubs in this neighbourhood					0.718
I always participate in activities in this neighbourhood					0.550
Eigenvalue	8.219	2.938	2.068	1.351	1.141
% of Variance	39.14%	13.9%	9.8%	6.43%	5.44%
Commulative variance	39.14	53.04	62.84	69.27	74.71

Note:The bold values indicate the significant value loadings of>0.4

Source: Author's Analysis of Data, 2020.

In overall, the items loaded strongly on five factors and were named neighbourliness (*factor 1*), sense of community (*factor 2*), sense of belonging (*factor 3*), access to facility/services (*factor 4*), and community engagement (*factor 5*). Reliability test (Cronbach's alpha) was carried out on these factors in order to examine the internal consistency and the

extent of co-variation among the items measuring each factor (Chew *et al.*, 2008). Although several authors have proposed that a minimum acceptable Cronbach's alpha value is 0.7. These factors were considered acceptable to measure neighbourhood ties in Minna as they achieved level of reliability determined by the Cronbach's Alpha value of >0.70 as presented in table 6.

Table 6: Reliability Test (Cronbach's Alpha) for Factors Influencing Neighbourhood Ties among Residences in Minna

Factors/Items	Factor Loading		Remarks
Factor 1: Neighbourliness		0.93	Acceptable
I visit my neighbours	0.995		
Age	0.989		
I interact with my neighbours	0.889		
I offer support/help to my neighbours	0.804		
Whenever there are problems in this neighbourhood, they are solved by the people	0.673		
I look after my neighbour's children/properties when they are not around	0.502		
People in this neighbourhood care about each other	0.501		
People in this neighbourhood always share important events such as birthday parties, weddings, festivals	0.436		
Factor 2: Sense of Community		0.89	Acceptable
Marital Status	0.952		
I am happy living among people in this neighbourhood	0.951		
I feel this neighbourhood is good to live in	0.534		
I really feel that I am part of this neighbourhood	0.514		
Marital Status	0.952		
Factor 3: Sense of Belonging		0.85	Acceptable
I can identify most of the people in this neighbourhood	1.034		
Length of stay in the neighbourhood	0.892		
Most of the people in this neighbourhood knows me	0.475		
Factor 4: Access to Facilities/Services		0.84	Acceptable
There are available facilities/services in this neighbourhood	0.907		
I use these facilities/services in this neighbourhood	0.890		
This neighbourhood is planned and well layout	0.648		
Factor 5: Community Engagement		0.71	Acceptable
I do voluntary work in this neighbourhood	0.767		
I belong to a groups/clubs in this neighbourhood	0.718		
I always participate in activities in this neighbourhood	0.550		

Source: Author's Analysis of Data, 2020.

Conclusion

Within the concept of sustainable development, there is very little known about social impacts and levels of acceptability of compact urban form in the context of cities of developing countries. Urban neighbourhoods play a significant role in developing urban sustainability as the smallest unit of city so that the formation and promotion of neighbourhood identity, and focusing on social relationships would be in harmony with urban sustainability. It is believed that a dramatic change in spatial structure of urban neighbourhood include a decline in levels of political, social and economic role of neighbourhoods as long as they have had some disadvantages such as marginalization, poor housing, social psychological and cultural damages, and particularly losing

spiritual and material values. Thus, it is necessary to assess factors that influence neighbourhood ties among residents in Minna, as who live in neglected and deprived neighbourhoods often spend large amount of time and effort attempting to obtain meagre benefits from community organizations, politicians, and social service agencies. The study identified factors from the literature to influence neighbourhood ties and assessed the factors among residents in Minna using EFA. The result revealed five (5) factors extract with high reliability test (Cronbach's Alpha value of >0.70) to influence neighbourhood ties among residents in Minna. The factor includes sense of community, sense of belonging, neighbourliness, access to facilities/services and community. The findings recommended that important programs aimed at promoting sustainable neighbourhood development should consider the identified

factors to strengthening neighbourhood ties among. Although the current study offers several contributions, however, further research is needed to model the relationship between the identified factors and the items to assess level of neighbourhood ties among residents in Minna.

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