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**SCHOOL OF ENVIRONMENTAL TECHNOLOGY
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AND SUSTAINABLE PRACTICES
IN THE BUILT ENVIRONMENT**

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Volume 1

Editors

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School of Environmental Technology,
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FOREWORD

The organising committee of the 2nd School of Environmental Technology International Conference is pleased to welcome you to Federal University of Technology Minna, Niger State Nigeria.

The conference provides an international forum for researchers and professionals in the built and allied professions to address fundamental problems, challenges and prospects that affect the Built Environment as it relates to Contemporary Issues and Sustainable Practices in the Built Environment. The conference is a platform where recognised best practices, theories and concepts are shared and discussed amongst academics, practitioners and researchers. The scope and papers are quite broad but have been organised around the sub-themes listed below:

- Architectural Education and ICT
- Building Information Modeling
- Construction Ethics
- Energy efficiency and Conservation
- Environmental Conservation
- Facility Management
- Green Construction and Efficiency
- Health and Safety Issues
- Information Technology and Building Maintenance
- Information Technology and Construction
- Information Technology and Design
- Innovative Infrastructure Development
- Resilient Housing Development
- Smart Cities Development
- Social Integration in Cities
- Sustainable Building Materials Development
- Sustainable City Growth
- Sustainable Cost Management
- Sustainable Property Taxation
- Sustainable Architectural Design
- Sustainable Urban Transportation Systems
- Theory and Practices for Cost Effectiveness in Construction Industry
- Urban Ecology Management
- Urban Land Access
- Disasters, Resilient Cities and Business Continuity

We hope you enjoy your time at our conference, and that you have the opportunities to exchange ideas and share knowledge, as well as participate in productive discussions with the like-minded researchers and practitioners in the built environment and academia.

Local Organising Committee
School of Environmental Technology International Conference (SETIC) 2018
APRIL 2018

ACKNOWLEDGEMENTS

We have tried to build on the success of the maiden of SETIC held in 2016 which came with good feedbacks and memories. The success of the 2nd School of Environmental Technology International Conference holding at the Main Campus of the Federal University of Technology Minna, Nigeria is predicated on the support and goodwill from Vice-Chancellor of Federal University of Technology, Dean School of Environmental Technology and many other highly motivated people.

I sincerely wish to appreciate you for attending this Second edition of SETIC and to warmly welcome you to the city of Minna the capital of the *POWER STATE*. It is a great honour to have you in the beautiful campus of Federal University of Technology Minna, Nigeria. I am aware of the great sacrifices made by many of you to be present in this occasion and I will definitely not overlook the long distances some of you have had to cover to get to the conference venue. We genuinely appreciate all your efforts. It is our singular hope and desire that this 2nd edition of the conference (SETIC 2018) meets your expectations and gives you unquantifiable experience and tremendous developmental networking opportunities for a life fulfilling career.

We are grateful for the presence of the Vice Chancellor of the Federal University of Technology Minna Professor Abdullahi Bala whose leadership and distinguished academic career has served as inspiration and encouragement to many academics within and outside Nigeria. His desire to continue on the path of greatness for this Humble University of ours has seen the University become a destination for International conferences, Public lectures, Book Development, Presentations and Seminars that meet International standards. We are happy to have you as the Chief host to declare the conference open and deliver the welcome address.

We are grateful to the former Dean of School of Environmental Technology, Federal University of Technology Prof A.M. Junaid and the Ag. Dean of School of Environmental Technology Prof. S.N. Zubairu for providing the healthy platform, academic backing, management and guidance for the organisation of the conference. You increased the level of challenge from 2016 and provided the required resources, direction, energy and strategies for achieving its success, it is a great honour of having the opportunity to work closely with you and learning never to give up.

I wish to thank also all the special guests particularly leaders of the Industry, Built Environment and Academia.

A special thanks goes to the Bursar of Federal University of Technology, Mrs. Hajara Kuso for the timely responses to all our requests regarding the financial aspects of access to funds for the conference.

SETIC is beginning at the foundation this year and for this I wish to thank all those who have supported us through various forms of participation. Specifically I wish to thank the delegates and the partners for contributing significantly to the conferences. I wish to thank Prof. S.N. Zubairu Prof. A.M. Junaid, Prof. O. O. Morenikeji and Prof. Y.A Sanusi, who all genuinely and consistently monitored the progress of the conference preparations. My desire in 2016 was for SETIC to become a constant feature in the calendar of the University and global conference listings, am a happy person today seeing this desire fulfilled with the SETIC 2018 edition.

Delegates to SETIC 2018 are from different academic and research institutions that are spread across different countries. This offers participants a wonderful opportunity for exchange of cultural, social and academic ideas during the conference periods. It is also an opportunity to create awareness about programmes and events at the participants' individual institutions. I encourage you all to make good use of the networking opportunities that are available.

In this 2nd edition we received 258 abstract submissions because we had a wide distribution outlet as compared to the 1st edition which is an indication of growth. Using a rapid review system we accepted a total of 209 abstracts and the authors were communicated on what issues they were to examine while developing the full papers based on their titles and aim of the paper. Two hundred (200) full papers were received and reviewed. We sent back the reviewed papers and reviewers comments forms to each of the prospective authors to assist

in the preparation of the revised papers. It was after this rigorous and time consuming process that we were able to accept 172 papers for presentation at the conference. It gives me great joy therefore to congratulate all the authors whose papers made it to the conference. It is my sincere believe that the presentation of the different ideas in your paper would go a long way in improving the knowledge of the participants and also generate meaningful discussions over the tea beaks, lunch and beyond.

I wish to express my utmost gratitude to each of the Seventy-three (73) reviewers for a wonderful job done well and for tolerating our deadlines and Oliver Twist syndrome. It is your dedication and expertise that has ensured that the conference is a success.

Special thanks to all our keynote speakers, Arc. Umaru Aliyu, (ficiArb, fnia, ppnia) (*President, Architects Registration Council of Nigeria (ARCON)*), Prof. Stella N. Zubairu (*Former Dean Postgraduate School, Federal University of Technology Minna*), Dr. Julius A. Fapohunda, (*Editor-in-Chief: International Journal of Sustainable Energy Development & Leader: Sustainable Building and Urban Growth Research Unit, Cape Peninsula University of Technology*).

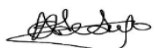
It is important to appreciate the roles and efforts of the following people for their selfless and very significant contributions made towards the successful organization of the conference: Oyetola Stephen, Alonge Olubunmi, Lynda Odine, Adedokun John, Idowu Oqua, Bamidele Eunice and Muhina Lami (for being available to run around at very short notice),

The organisation of this conference would not have been this easy without dedicated individuals offering to serve. My heartfelt gratitude goes to Dr. Taibat Lawanson, Dr. R.A. Jimoh, Dr. L.O. Oyewobi, Dr. N.I. Popoola, Dr. Lekan Sanni, Dr. I.B. Muhammad, Dr. A.A. Shittu and Dr. A. Saka for their unflinching support all through the process.

It is our sincere hope that this conference will serve as a forum for the advancement of research in the urban sphere towards achieving a sustainable environment. It is our sincere believe that academics and professionals in practices will continually participate in this forum.

Worthy thanks goes to the members of the Local Organising Committee for the tireless effort. The success of the conference goes to these wonderful people. You have made SETIC 2018 to ROCK.

Once again I wish to thank you all for creating time out of your busy schedule to attend this conference. Please do enjoy your stay at Federal University of Technology Minna, and the city as a whole. Ensure that you make use of the different fora created throughout the conference to build new relationships for the future and strengthen existing relationships. I look forward to seeing you all in future.



Olatunde Folaranmi ADEDAYO
SETIC 2018 LOC Chairperson
APRIL 2018

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DECLARATION

PEER REVIEW AND SCIENTIFIC PUBLISHING POLICY STATEMENT

10th APRIL 2018

TO WHOM IT MAY CONCERN

I wish to state that all the papers published in SETIC 2018 Conference Proceedings have passed through the peer review process which involved an initial review of abstracts, blind review of full papers by minimum of two referees, forwarding of reviewers' comments to authors, submission of revised papers by authors and subsequent evaluation of submitted papers by the Scientific Committee to determine content quality.

It is the policy of the School of Environmental Technology International Conference (SETIC) that for papers to be accepted for inclusion in the conference proceedings it must have undergone the blind review process and passed the academic integrity test. All papers are only published based on the recommendation of the reviewers and the Scientific Committee of SETIC

Names and individual affiliation of members of Review and Scientific Committee for SETIC Conference 2018 are published in the SETIC 2018 Conference Proceedings and made available on www.futminna.edu.ng

Olatunde Folaranmi ADEDAYO
Chairman SETIC 2018
Federal University of Technology, Minna, Nigeria

Papers in the SETIC 2018 Conference Proceedings are published on www.futminna.edu.ng.

REVIEW PANEL

We wish to express our deepest and sincere gratitude to the following people in no particular order who provided comprehensive scientific reviews and made commendable suggestions towards improving the over 258 abstracts and 182 full papers submitted to SETIC 2018. They provided constructive comments to authors regarding their papers, it is necessary to state that there was no reported case of conflict of interest by any of the reviewers or the authors.

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PROFILE OF KEYNOTE SPEAKERS

SETIC 2018 organisers wishes to thank our keynote speakers for accepting to create time to share from their rich wealth of knowledge and interact with delegates and participants on varied issues being examined at this year's conference. A brief profile of each keynote speaker is provided here, this would allow for future interaction and networking with them.

Prof. ZUBAIRU, Stella Nonyelum
Federal University of Technology, Minna

Academic Qualifications: PhD (Building Maintenance, 1999); MSc (Facilities Management, 1989); BArch (Architecture, 1980).

Professional Registration: Registered Architect with Architects Registration Council of Nigeria (F/483, 1985); Member, Nigerian Institute of Architects; Member, International Federation of Facilities Managers.

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Prof Stella Nonyelum Zubairu is a lecturer in the Department of Architecture, School of Environmental Technology, at the Federal University of Technology, Minna, Niger State, Nigeria. She obtained a second class upper division degree (BArch) in Architecture from the University of Nigeria, Enugu Campus in 1980. She served in the National Youth Service Corps in Niger State Housing Corporation, Minna, after graduation (1980 -1981), then she worked briefly for a private architectural firm, SWACON, in Lagos before joining the Niger State Ministry of Housing and Environment in 1983 as an architect II. The Ministry later merged with the Ministry of Works and was renamed Ministry of Works and Housing. She rose through the ranks in the Ministry and reached the position of principal architect. During this time, she was involved in many projects in the State including the design and construction of the Government House, extension of the Governor's office, supervision of all health projects in the State and later the design and construction of the Old Peoples' Home and other social welfare projects in the State. In 1988, she was granted study leave to go to Strathclyde University, Glasgow, where she obtained an MSc degree in Facilities Management in 1989. In 1991 she left the Ministry to join the Federal University of Technology, Minna as a lecturer I. In 1995 she was granted a study fellowship to study for her PhD at the University of Lagos which she completed in 1999 with a PhD in Building Maintenance. She was appointed Head of the Department of Architecture, Federal University of Technology, Minna (1999 – 2006). She was promoted to the rank of professor in October 2006. She served as Deputy-Dean Postgraduate School (2008); then she was appointed as Director, Centre for Human Settlements and Urban Development (2008 – March 2011) in the same University. She was then appointed Dean of the Postgraduate School (March 2011 – March 2015).

SOCIAL CAPITAL: A POVERTY REDUCTION MECHANISM IN MINNA, NIGER STATE, NIGERIA

**MARTINS Valda Itunu, SANUSI Yekeen Adeeyo, AKANDE Sheerifdeen Olaide
MOHAMMED Ndana ADELEYE Bamiji Michael**

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Social capital in its simplest form is the sum total of all the experiences an individual acquired through participation in informal networks, registered organizations, associations of different kinds and social movement. Social capital theorists argued that social capital has positive impacts on various aspects of societal life, such as economic well-being, health, crime rates, educational achievement, and adolescent development. This study therefore appraised the role of social capital in poverty reduction in two selected neighbourhoods in Minna (Tunga and Maitumbi) by assessing households participation in social network and the impact of social network participation on households livelihood improvement and wellbeing. The study adopt the survey research design for data collection. Primary and secondary data were collected and analyzed descriptively. A total of 107 households were sampled using multi-stage sampling technique. The study revealed that, 72% of the households are well off as a result of participation in social network groups. The result also shows that 49% of the respondents have acquired training and benefit that have direct bearing on their livelihood, while 81% have acquired benefits with direct bearing on their general wellbeing. The study concluded that participation in social networks, both formal and informal has impact on household livelihood development and wellbeing, hence can serve as a tool for poverty reduction. The study recommends that government should partner with social networks groups to initiate programs that can help to alleviate poverty in the study area. Social networks should also be integrated into local poverty reduction action plan at the grassroots.

Keywords: *Livelihood Improvement, Poverty Reduction, Social Capital, Social Network, Wellbeing.*

INTRODUCTION

Poverty do not mean absence of earnings and basic services, it is simply dearth of social network and support system. It is not only lack of clothes, housing, nutrition and important needs of life, but also, he who has nobody is also really and truly poor (Woolcock and Narayan,2000 ; World Bank 2001). Africa in general and Nigeria in particular have rich natural, material and human resources yet most citizens are extremely poor. Many poverty reduction policies and strategies have been introduced and implemented at both national and local levels, yet many lack improved livelihood. According to Ellis and Freeman, (2005) livelihood is a means of survival, activities individuals or group engage in to make ends meet. It is also the assets that afford people the ability to build a suitable living considering all environmental threats and established rules that assist or prevent the achievement of sustainable existence. Social capital as a concept was advanced by Pierre Bourdieu, Loury and many other researchers as an approach of describing features of collective organization, such as trust and value, network interaction, rules and reliable supports systems that enable group achievement and institutionalized endeavour (Coleman,1990). Social capital is seen as a safe basket for the poor to save their eggs, a bunch of broom that sweeps better and glue that binds together.

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Martins, et al., (2018). SOCIAL CAPITAL: A POVERTY REDUCTION MECHANISM IN MINNA, NIGER STATE, NIGERIA. Contemporary Issues and Sustainable Practices in the Built Environment. School of Environmental Technology Conference, SETIC, 2018

Hamdan , *et.al.* (2014) described social capital as a form of livelihood improvement mechanism that the poor use in shaping their creation, distribution and usage of resources. It can also be said to be a minimum or societal threshold of collective support that could get people out of poverty trap. The notion of social capital is as old as man, and will continue to be part of man's way of life to relate and contribute to the survival of individual and the society. Social capital is a resource and a process that facilitates achievement in areas of wellbeing, learning, employments, livelihood improvement, societal marginalization and security (Hamdan , *et.al.* 2014).

The term social capital has found its way into environmental analysis only recently. Although different professions most especially the economists have been focusing on social capital, only a very few have perceived it from environmental and spatial perspectives. Social capital as benefits or assets that accrues to individuals or groups happen in space, hence its spatial dimension is important. The idea is crucial to survival and helps in overcoming risks to livelihoods, and also, a reduction of the effects of economic shocks. Among Nigerians, social capital serves as a means to livelihood improvement, where staff of institutions, traders, students come together to achieve a desired aim. Examples of this are various cooperatives in institutions, collection or contribution groups commonly called Adashe in the north, Esusu in the east and Olidara among the Bini tribe.

Several studies have been directed towards analyses of social capital and poverty, both in Nigeria and Minna. These studies have related social capital to mainly economic and welfare issues. Giving the instance of the study of (Ogwumike, 2002 and Okunmadewa, 2005) in Abia, Cross River, Ekiti, Kebbi, Kogi, and Yobe, Nigeria on impact of social capital on welfare and poverty, the studies revealed that Social capital have positive influence on per capita expenditure by reducing the probability of being poor. In Minna, the study of Ijaiya *et.al.*; (2012) revealed the impact of social capital on poverty reduction in Minna. Although reviewed literatures has revealed the importance of social capital as an economic mechanism against poverty shocks, other functions that social capital plays in livelihood improvement among dwellers in Minna to tackle poverty and its forces other than the economic aspect have not been investigated. Hence, this study seeks to fill this gap by establishing the role of social capital as a poverty reduction mechanism. This will be achieved through the following objectives; assessing household's participation in social network; and examining the impact of social network participation on households livelihood improvement and wellbeing.

Theoretical Consideration in Social Capital

Theoretically, local level associations contribute to societal progress (Okunmadewa, 2008). They are contemporary traditional actions that exist at national, regional and local levels that facilitate societal progress. Social capital, is a social connection with a measure of trust, norms and commitment that empower individual or group to make reasonable progress. Okunmadewa *et al.* (2005) observed that the idea of social capital exist in environments where there are social interaction to enhance the quality of relationship and improve societal welfare. Coleman (1988) and Putnam *et al.* (1993) see the concept as having confidence, passionate connection in network or societal values that assist in the achievement of collective goals. It is viewed as associations, connections, beliefs and trust that form the strength and bond of people societal relations, The ideal is not only just an association or means of support for the people but also a bond that keep them together (World Bank, 1998; Lynch *et al.*, 2000 Tabi, 2009;).

Although several meanings and view of the concept have been proposed by many researchers; the most used definition is that advanced by Robert Putnam who sees the concept as a part or way of life that help people work collectively and more efficiently to chase common goals (Barron *et al.*, 2010). Social capital can also be seen as assets that the poor accumulate through different associations either inter or intra family relationship to add to their lot and make their voice heard in a complex society. It is usually a social benefit earned based on trust, understanding, sacrifice and focus. It is commonly construed as the amount of reliance, collective rules, groups and links in an environment (Tabi, 2009). In summary social capital is referred to as the worth of social association as well as the gains that originate from such interaction that can be of huge advantage or assistance to The People In Such Association.

Levels and Types of Social Capital

Patacchini (2015) maintained that the level of social interaction in network in the geographical space is inversely related to the geographical distance. Increase in this distance attracts more cost and this decreases the incentives in social capital. Weak ties benefit substantially from geographical proximity, weak ties need frequent interaction to be sustained; frequent interaction, in turn, is best achieved among individuals who are located in the same geographical space (Roel *et al.*, 2009).

Network group linkages form the bedrock of social capital (Roel *et al.*, 2009). Rules and beliefs differ greatly among individuals and associations; one may ask whether rules and beliefs are associated with space. It can then be said that several networks are established at different spatial levels, from regional to global, and the variance between networks are bigger than variance among spatial units on the similar level, for instance sports club. However, it can be claimed that there are dissimilarities in beliefs, such as confidence and tolerance, between places, regions and countries. The spatial distribution of social capital is a relative function of the spatial distribution of people. People tend to interact more with others that are highly central in the network of social contacts and that are geographically closer; Social interactions and social network are important components of social and economic life of people (Roel *et al.*, 2010).

Social capital is multi-dimensional with each dimension contributing to the meaning of social capital. Each of the dimensions cannot capture fully the concept in its totality. They are commonly seen as; groups and networks, trust and solidarity, collective action and cooperation, information and communication, social cohesion and inclusion, and empowerment and political action. Discussing the different dimensions separately and collectively to achieve a shared goal, which is an important goal of social capital, (Woolcock *et al.* 2000) Informal networks are manifested in spontaneous, informal, and unregulated exchanges of information and resources within communities, as well as efforts at cooperation, coordination, and mutual assistance that help maximize the utilization of available resources.

Social capital exists at individual level, the informal social group, the formal organization, the community, the ethnic group and even the nation (Bankston and Zhou 2002; Coleman, 1988; Portes, 1998; Putnam, 1995; Sampson *et al.*, 1999). There are different views on the level at which social capital exist; some authors put forward that social capital is at individual level. As posited by Kilby (2002) social capital exists within levels or scales as one feels belonging to family, community, profession, country concurrently. Adler and Kwon (2002) supported this argument stating that social capital's sources lie in the social structure within which the actor is located. Thus, social capital can be thought of as having an individual and an aggregate component (Buys and Bow, 2002; Slangen *et al.*, 2004). Social capital belongs to the group and can be used by the group or individuals within the group (Kilpatrick *et al.* 1998; Sander, 2002). An individual's social capital perspective views social capital as a personal belonging such as personal financial assets (Portes, 1998). In contrast, an aggregate social capital perspective views social capital as a collective belonging, such as the amount of social capital held at a community level or even at national level (Putnam, 2000). Aggregate social capital implies that each person in a community or even a nation owns the same amount of aggregate social capital, despite their individual variations. Therefore, aggregate social capital can be viewed as an important component shaping community or national social contexts.

A question may be asked whether social capital can be increased in the short term. This question is similar to the debate of whether social capital can be measured, as without measurement, change cannot be determined. There are views in the literature over whether social capital can be built in the short term (Claridge, 2004). According to Putnam (1993), social capital is largely determined by historical factors; it can thus not be enhanced in the short term. This has been challenged by Petersen (2002) who posited that social capital creation is possible. This is supported by (Schmid, 2000 ; Uslaner, 2001) who saw social capital development as a by-product of other activities that result in dynamic changes. Any social interaction creates, or at least, changes social capital. This is supported by Soubeyran and Weber (2002) who stated that social capital can be created through repeated exchange and face-to-face contacts.

Social capital is perceived to be multi-dimensional in nature; hence it has different forms. It can be discussed from gender and ethnic perspective. According to Fox and Gershman

(2000); Molinas (1998) Ethnic and gender dimensions of social capital remain under-recognized. Social capital in the literature is generally conceptualized gender blind paying little attention to gendered intra-household issues of power and hierarchy (Silvey and Elmhirst 2003). Silvey and Elmhirst (2003) argued that for a more complete picture of social capital, it is specifically one that includes attention to the gendered and intergenerational conflicts and hierarchies within social networks, and the broader context of gender difference within which social networks are forged.

Role of Social Capital in Wellbeing and Community Development

The concept of community, according to ABS (2002) refers to either place-based or non-place-based communities. Place based communities are considered to exist at a variety of geographical levels, such as neighbourhood, work place, suburb, town or city, district or region state and Connery or even a global community. Non-place based communities are group of common interest which includes sport clubs, hobby groups, ethnic and religious group, common bonding characteristics may be in this category. An understanding of the fact that some forms of social capital are placed based should promote scope for it.

Social capital is not embodied in any particular person, but in people social relationships and social capital is realized by individuals Coleman, (1998). As put by Putnam (1993) “working together is easier in a community blessed with substantial stock of social capital”. He also stated that communities, not people, possess stock of social capital. So, social capital simultaneously is both a private and public good. Social connection and networks help in moving people and community out of poverty. With the assets accumulated as social capital, they are able to build houses, buy cars, create good living conditions for themselves and other families, send children to school, buy land and other developmental projects that lead to development of a community. When people come together to form social network, it helps them to accumulate capital which in turn give them power to make decisions and controls what come to them in form of land, employment, education investment and any other gains. All these are carried out in space which makes their study very important in relation to spatial analysis of social capital (Claridge 2004).

Cox (2000) on this, believes that the strength of social capital come into play when communities have to deal with conflict, problems or challenges. A community with high accumulation of social capital will be able to manage difficulties while one with low levels will manage less well. This is likely to be because social network is like a bunch of broom that sweeps and cleans better than a single stick. People are motivated and socially engaged when in groups than when alone. According to Bush and Baum (2001) social infrastructure in form of groups, network and organizations are prerequisite for a healthy community.

Putnam, (2000) and Coleman, (1988) suggested that involvement of families, community and religious bodies can improve educational outputs. Social capital was linked to the lower dropout rates in catholic high schools as compared to public schools and non-catholic high schools in the United States (Putnam, 2000).

There are several debates and controversies over the possibility, desirability and practicability of measuring social capital, yet without a measure of the store of social capital, its characteristics and potential remain unknown (Durlauf 2002; Falk and Harrison 1998). Measurement attempts are flawed by problems with separating form, source and consequences (Adam and Roncevic 2003; Onyx and Bullen 2001; Sobels *et al.*, 2001). Social capital cannot be measured directly but must be measured by the use of proxy indicators of social capital. Social capital is such a complex concept that it is not likely to be represented by any single measure or figure. The multiple dimensions require sets of indicators to be effective (Cox and Caldwell 2000).

Social Capital and Livelihood Improvement

Social capital has great significance on the poor. According to Woolcock and Narayan (2000) social capital is not ‘what you know, it is who you know’. Availability of various social capital, help groups and individuals fight poverty more effectively (Woolcock and Narayan 2000). According to Grootaert (1999, 2001, 2003), social capital influence household livelihood by reducing the probability of being poor; economic development among individuals, households and groups are enhanced by making possible dealings through increasing information, reducing costs and facilitating collective action.

Most poor that belongs to society network groups at times buy land or purchase built houses, buy cars, send children to school and get other necessities of life that ordinarily without social capital they can never acquire in their life time. Social capital assists people in meeting the desire of their hearts by way of acquiring assets in the group they belong (Odumosun *et al.*, 2003). High levels of social capital at the state level are correlated with lower rates of murders and violent crimes (Sander and Minicucci 2007). According to Sander and Minicucci (2007), social capital is associated with effective governance and a healthy participatory democracy.

RESEARCH METHODOLOGY

Cross sectional survey research design was employed in the gathering and collection of data for the study. Primary and secondary data were collected and analysed descriptively. A total of 107 copies of questionnaires were administered to households in Maitumbi and Tunga area in Minna. Simple random sampling technique was used to select respondents for the study. The primary data collected for the study are; households' participation in social network, number of social network, types of social network, contribution of social network households' livelihood as well as benefit acquired from social networks. The data were analysed using simple frequency, percentages, mean and standard deviation. Instrument for data collection includes questionnaire, digital camera and hand held GPS.

RESULTS AND DISCUSSION

Summary of Respondents Socio-Economic Characteristics

Socio-Economic characteristics of respondents are presented in Table 1. Majority of the respondents were male; 59%, while female respondent account for 41%. This shows that both male and female opinion was adequately captured for the study. The mean age for the respondents is 38 years, while the average household size is 5.5 persons per household. The average monthly income for the respondents is ₦37,356.00, the minimum income recorded is ₦15,000.00 and maximum (₦180,000.00). This implies that both that respondents for the study cut across various socio-economic class. The result also shows that majority of the respondents (57%) are married, followed by singles who account for 30% of the respondents.

Table 1: Summary of Respondents Socio-Economic Characteristics

Gender	Frequency	Percentage	Age Distribution	
Male	63	59	Mean	38
Female	44	41	Minimum	25
Total	107	100	Maximum	57
Marital Status	Frequency	Percentage	Household Size	
Married	61	57	Mean	5.5
Separated	9	8	Minimum	3
Single	30	28	Maximum	8
Widow/Widower	7	7	Income Distribution	
Divorced	0	0		
Total	107	100	Mean	₦37,356.00
			Minimum	₦15,000.00
			Maximum	₦180,000.00
Education Status	Frequency	Percentage		
No Formal Education	2	2		
Quranic	0	0		
Primary	5	5		
Secondary	43	41		
Tertiary	57	53		
Total	107	100		
Artisan	21	20		
Civil Servant	36	34		
Trader/Business	32	30		
Unemployed	11	10		
Others	7	7		
Total	107	100		

Source: Authors Fieldwork (2017)

Respondents for the study can be said to be literate as majority have attained (53%) at higher education in form of tertiary education, while 41% have secondary education. The study also shows that respondents are from diverse occupation where the majority are either civil servant (34%), Trader/businessmen (30%), and Artisans (20%).

Participation in Social Network

The study assessed the promotion of respondents that participate in at least one form of social network group and the result is presented in Table 2. The result reveals that 73% of the respondents belong to one form of social network or the other, while 27% do not belong to any form of social network. The high level of participation in social network group may be as a result of the benefit derived from participation in social networks.

Table 2: Participation in social network

Neighbourhood	Yes	No
	Frequency (%)	Frequency (%)
Tunga	34 (78%)	9 (22%)
Maitumbi	44 (69%)	20 (31%)
Total	78 (73%)	29 (27%)

Source: Authors fieldwork (2017)

Furthermore, the study also revealed that the mean number of social network groups that respondents belong to is 3. In Tunga, respondents belong to an average of two (2) social network groups, while Maitumbi is four (4) (Table 3). This implies that respondents in Maitumbi which is a low income neighbourhood tend to participate in more social network groups than respondents from Tunga (medial income neighbourhood).

Table 3: Number of social network

Neighbourhood	Mean	Minimum	Maximum
Tunga	2	1	3
Maitumbi	4	1	6
Total	3	1	6

Source: Authors fieldwork (2017)

The study also analysed the nature of social network groups that respondents belong to, and the result is presented in Figure 1. The result shows that respondents from Tunga are more into profession based (53%) social network groups, followed by Faith-based social network (35%). While majority of respondents from Maitumbi belong to faith based social networks, followed by township and gender-based (25%) social network groups.

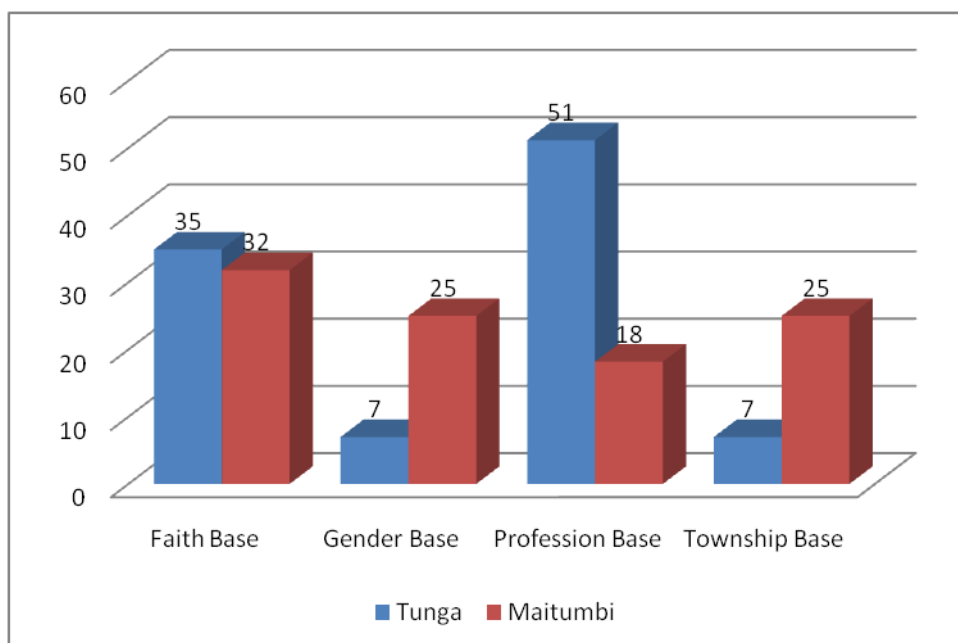


Figure 1: Types of Social Network Groups by Neighbourhood

Source: Authors fieldwork (2017)

Composition of Social Network Groups

Table 4, shows the composition of various types of social networks by occupation. The result shows that artisans are more into township-based (38%) and profession based (37%), while civil servant are more into profession-based (50%), and faith-based (33%) social network group. The analysis also shows that majority of traders are into faith-based (41%), and township-based social network groups.

Table 4: Composition of Social network Group by Occupation

Occupation	Faith Base	Gender Base	Profession Base	Township Base
Artisan	25	0	37	38
Civil Servant	33	17	50	0
Trader/Business Men	41	9	18	32
Unemployed	29	57	0	14
Others	54	0	23	23
Total	42	18	18	22

Source: Authors fieldwork (2017)

Similarly, gender composition of the various types of social network group was also assessed, and the result is presented in Table 5. The analysis shows that male and female respondents participated almost equally in faith-based social network 54% and 46% respectively. Female respondents are more into gender based (55%) social network group than their male counterpart. Male respondents dominate profession and township-based social network with 73% and 86% respectively. It is can be observed that participation in social network group is not a function of occupation or gender.

Table 5: Gender Composition of Social Network Group

Types of Social Network	Male	Female
Faith Base	54	46
Gender Base	45	55
Profession Base	73	27
Township	86	14
Total	63	37

Source: Authors fieldwork (2017)

Frequency of Meeting

Table 6, shows the meeting schedule of social network groups. Majority of the social network group meets on monthly basis (41%), followed by those that meet every week (39%). This pattern is also observed at neighbourhood level in Tunga and Maitumbi.

Table 6: Social Network Meeting Schedule

Meeting Schedule	Tunga	Maitumbi	Overall
Daily	7	10	9
Fortnight	8	14	11
Weekly	41	37	39
Monthly	44	39	41
Total	100	100	100

Source: Authors fieldwork (2017)

Benefit and Livelihood Improvement from Social Network

The benefits gained from participation in social networks were categorized into tangible and intangible assets. Tangible assets include; land, household appliance, car, livelihood instrument, and livestock, while the intangible asset include employment opportunities, education, training, loan (cash) and others in form of good will messages and more. Figure 2, shows the proportion of respondents who have benefited from various forms of tangible asset. The result shows that 86% have gained tangible asset in form of household appliance

(television, radio, handset), followed by livelihood instrument (36%), land or landed properties (27%), car (25%) and Livestock (22%)

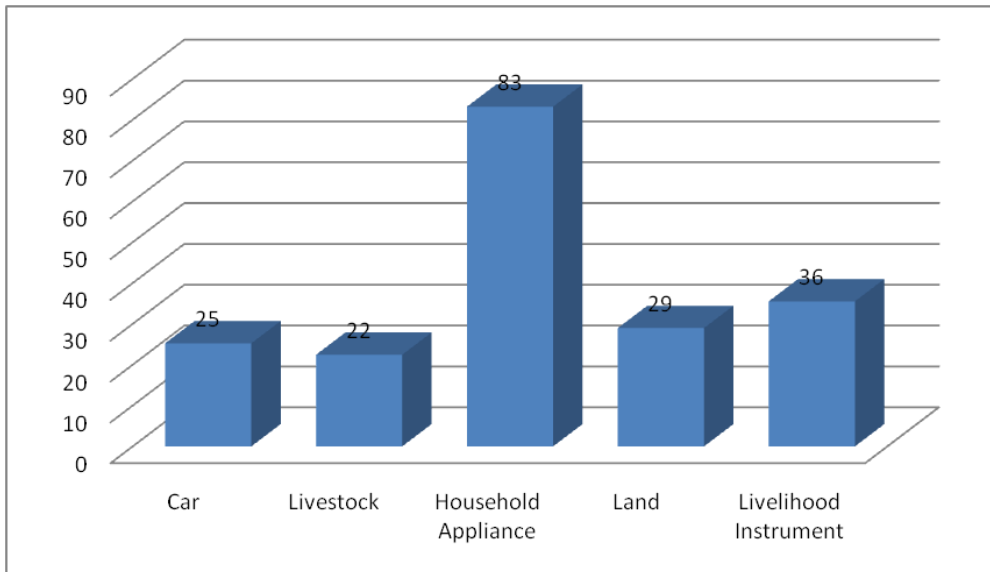


Figure 2: Tangible Asset Gained from Social Network

Source: Authors fieldwork (2017)

Similarly, Figure 3, shows the proportion of respondents who have benefitted from intangible asset as a result of participation in social network. The result shows that majority of the respondents enjoy goodwill message (100%), loan (71%), spiritual/moral support (54%), and employment opportunities (53%) as intangible benefit as gains for participation in social network.

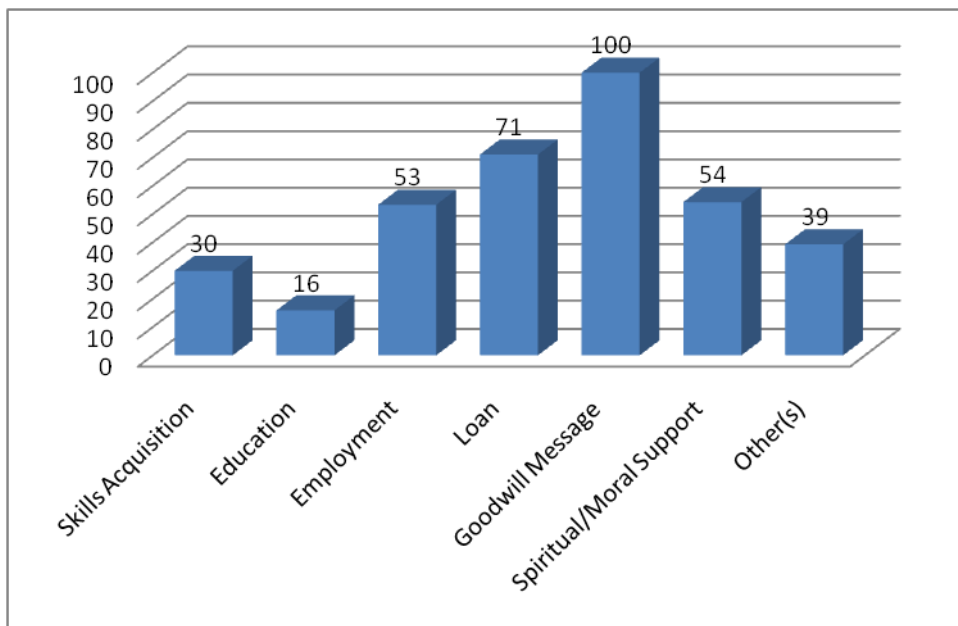


Figure 3: Intangible Asset Gained from Social Network

Source: Authors fieldwork (2017)

Contribution to Livelihood Improvement

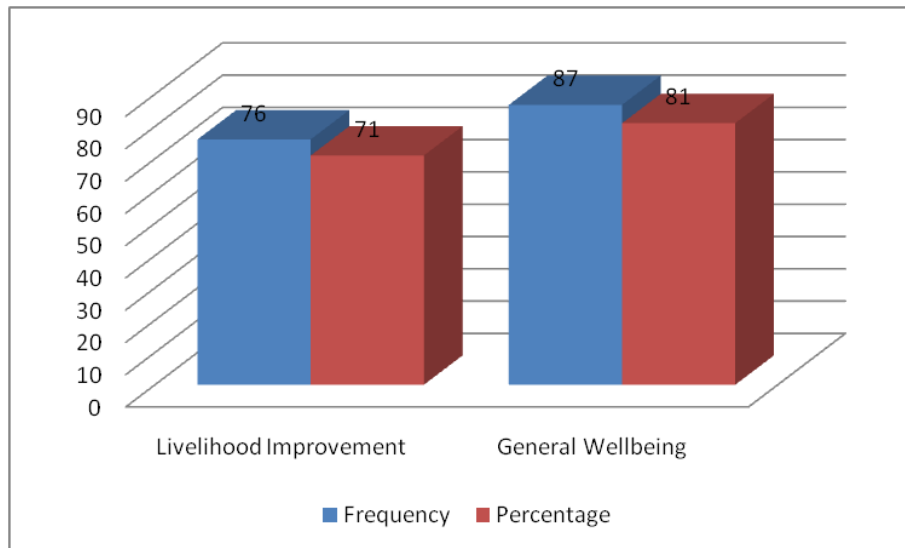
Respondents were asked to rate the extent to which active participation in social network has contributed to their livelihood improvement, using a likert scale of five. The result is presented in Table 7. The shows that in Maitumbi, 62% of the respondents agreed that contribution to livelihood improvement from social network participation is highly significant, and Tunga (31%). While significant contribution to livelihood improvement in Maitumbi and Tunga is 33% and 45% respectively. Maitumbi recorded the highest mean weighted value of 4.4, and Tunga 3.9. The general mean score for contribution to livelihood improvement is 4.2, hence it can be inferred that social network participation has significant impact on livelihood improvement of the respondents.

Table 7: Extent of Social Network Participation on Livelihood Improvement

	Maitumbi	Weighted Sum	Tunga	Weighted Sum
Highly Significant	62	310	31	155
Significant	33	132	45	180
Moderate	10	30	24	72
Insignificant	2	4	7	14
Highly Insignificant	0	0	0	0
Total	100	476	100	421
Mean		4.4		3.9
Composite Mean		4.2		

Source: Authors fieldwork (2017)

Furthermore, the study also assessed the impact of social network on the general wellbeing and livelihood improvement and the result is presented in Figure 4. The result shows that 72% of the respondents agreed that social network participation has impact on their livelihood improvement, while 81% of the respondents say social network participation has impact on their general wellbeing. From the foregoing analysis, it can be observed that majority of the respondents have acquired diverse gains that have impacted positively on their livelihood means and general wellbeing due to participation in social network.

**Figure 3: Impact on General Wellbeing**

Source: Authors fieldwork (2017)

CONCLUSION

Having assessed the types, nature, participation and impact of social network on livelihood development of the people, the study concludes that social capital is a veritable tool for poverty reduction. Participation in social network group provides the people with financial, moral, and spiritual support in terms of need. Participation in social network is no doubt a form of resilience measure put in place by households. Most people have benefitted immensely from active participation in social network through the acquisition of various forms of benefit (Tangible and Intangible). These benefits have direct or indirect link the livelihood improvement and general wellbeing of the masses. The study therefore recommends that, the government should integrate the social network groups into various poverty reduction programmes at all levels. Government should partner with social networks groups to initiate programs that can help to alleviate poverty in the study area. Social networks should also be integrated into local poverty reduction action plan at the grassroots.

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