CLIMATE SMART AGRIBUSINESS FINANCING (CSAF) FORESTRY AND WASTE MANAGEMENT

GLOBAL ISSUES & LOCAL PERSPECTIVES

Edited by

Eteyen Nyong

Edith C. Chuku

Ibisima Etela

B. M. Auwalu

Okorinama A. F. Wokoma

Opara E. Umunna

PUPLISHED BY:

Society for Agriculture, Environmental Resources & Management (SAEREM)

SAEREM BOOK CHAPTERS First published July 2026-- ISBN 978-978-60709-1-7 @ SAEREM World

First published August 2026

SAEREM World , Nigeria

CLIMATE SMART AGRIBUSINESS FINANCING (CSAF) FORESTRY AND WASTE MANAGEMENT --- ISBN 978-978-60709-1-7

Typeset in Times New Roman

CLIMATE SMART AGRIBUSINESS FINANCING (CSAF) FORESTRY AND WASTE MANAGEMENT --- ISBN 978-978-60709-1-7

Global Issues & Local Perspectives

Printed at: SAEREM World

TABLE OF CONTENTS

CLIMATE SMART AGRIBUSINESS FINANCING (CSAF) FORESTRY AND WASTE MANAGEMENT --- ISBN 978-978-60709-1-7

Part one: CLIMATE SMART AGRIBUSINESS FINANCING (CSAF)

Chapter 1:

Sources and Constraints to Agroforestry Financing in Nigeria

[1]Edoka, M. H. and [2]Edoka, Edebo L.

Chapter 2:

Climate- Smart Agricultural Waste Management: The Circular Economy Perspective

*Okwor, Uchechi Mercy [1] and Okwor, Kelechi C.[2]

Chapter 3:

Farmers Perception on the Effect of Climate Change on Soybean Production and the Adoption of Coping Strategies

Paul, A. H. (B. Sc. M. Sc, Ph. D.,) and Oyigbenu A. O. (B. Sc. MSc)

Chapter 4: **Resource-Efficient Waste Management and Financing in Climate-Smart Agribusiness**

Dr. Ijeoma Rose Ezebuike

Chapter 5:

CLIMATE SMART AGRIBUSINESS FINANCING (CSAF) FORESTRY AND WASTE MANAGEMENT --- ISBN 978-978-60709-1-7

Social Capital as an Evolving Framework for Shaping Livelihood and Farming System Resilience amidst Climate Adaptation

Sesugh Uker [1], and Muhammad B. Bello [2]

Part two: FORESTRY AND WASTE MANAGEMENT

Chapter 6:

Influence of Climate Change Adaptation Strategies and Information Communication Technology (ICTS) Utilization by Soybean Farmers in North East Nigeria

Paul, A. H. (BSc., MSc., PhD) and Gadu, H. O., (BSc, MSc)

Chapter 7:

The Impact of Climate Change on Animal Health and Productivity

Oyeleye, O. O.

Chapter 8:

Advances in Remote Sensing for Biodiversity: Theory, Methods, Applications, and Validation

[1]Salami, K. D., [2]Falade, L. O. and [2]Soba, T. M.

Chapter 9:

Impact of Household Solid Waste Management in Yola North Local Government Area, Adamawa State-Nigeria

Dashe Nanchan Emmanuel & ,Nuhu Ardo Zilani

CLIMATE SMART AGRIBUSINESS FINANCING (CSAF) FORESTRY AND WASTE MANAGEMENT --- ISBN 978-978-60709-1-7

Preface

This book adopts an exegetical approach as well as a pedagogic model, making it attractive agriculture and environmental economics teachers, professional practitioners and scholars. It is eschews pedantry and lays bars the issues in such clarity that conduces to learning. The book elaborates on contemporaneous **Climate Smart Agribusiness Financing (CSAF) Forestry and Waste Management** issues of global significance and at the same time, is mindful of local or national perspectives making it appealing both to international and national interests. The book explores the ways in which **Climate Smart Agribusiness Financing (CSAF) Forestry and Waste Management** issues are and should be presented to increase the public's stock of knowledge, increase awareness about burning issues and empower the scholars and public to engage in the participatory dialogue **Climate Smart Agribusiness Financing (CSAF) Forestry and Waste Management** necessary in policy making process that will stimulate increase in food production and environmental sustainability. **Climate Smart Agribusiness Financing (CSAF) Forestry and Waste Management :** *Global Issues & Local Perspectives* is organized in two parts. Part One deals with The Concept of **Climate Smart Agribusiness Financing (CSAF)**, Part Two is concerned with The Concept of **Forestry and Waste Management**

Eteyen Nyong; August 202

Chapter Nine

Impact of Household Solid Waste Management in Yola North Local Government Area, Adamawa State-Nigeria

Dashe Nanchan Emmanuel & ,Nuhu Ardo Zilani

1. . Department of General Studies, National Institute of Science and Leather Technology, Zaria
2. Department of General Studies, Federal Polytechnic, Katungo.

Introduction

Solid waste is a general term used to describe non-liquid materials arising from various human activities in consumption and production; it is also seen as a byproduct of excess consumption and production in a society. (Rmadhan,2015). According to Dadson, Shaibu & Godfred (2013) waste is directly linked to human activities and development which affects lives and livelihoods .According to Begum et al(2007) cited in Bamlaku, Abera and Paulos(2019)solid waste consists of materials, which can be classified according to their physical and chemical properties as garbage, rubbish, trash, junks and ashes.

Poor management of solid waste arising from improper collection, disposal, dumping and burning, has daunting negative health and environment effects to both humans and the eco-system. The health implication arises as poor solid waste disposal may serve as breeding ground for mosquitoes, flies and other harmful insects including cockroaches. Improper solid waste management may also contaminate air(causing respiratory ailment, and water(causing diarrhea, typhoid etc.) which may further affect food chain and other physical hazards leading to injuries from broken objects, needles etc.. It may also cause mental/ or social health effects, where refuse dumps around living environment cause anxiety and sleep disorder.

Clean environment is an important barrier to many infectious diseases including feacal- oral diseases. Good hygiene promotes better health and wellbeing.it is also a fundamental human right. In 2020, 54% of the global population (4.2 billion) used a safely managed sanitation service World Bank (WHO). Waste management has become a major concern for individuals,

government and non-governmental organization world over and cities in developing countries are facing increasing management of waste

Urbanization and increase in population has contributed immensely to an increase in solid waste in developing countries. Another challenge of solid waste management is that it is expensive to maintain hence, a call for private sector involvement on a full cost-recovery operation which will guarantee customer satisfaction and improve the quality of the environment

Legislation in Nigeria on environment protection, solid waste management still remains a problem due to enforcement and prosecution of offenders. According to Agunwamba (1998) despite the formulation of Federal Environmental Protection Agency(FEPA) and national environmental policy, the Nigerian environment is still not protected.

1.2 Statement of Problem

Solid waste is one among many by-product of municipal life. Solid waste if not properly managed has effect on human health and the environment. Poorly disposed solid waste has great consequences on human health and also on the environment which affects humans, bio diversity and plants. Improper disposal of solid water in Yola North LGA continues to bring severe health problems to indigenes in the area.

Solid waste contaminates ground water and also increases greenhouse gas emission. Environment effect of greenhouse gas emission in Yola North is evident in high temperatures and low river levels. Wells continue to dry up causing water scarcity . Against this backdrop, this study examined the importance of solid waste management in Yola North Local Government Area of Adamawa State-Nigeria with the aim of finding better solutions to effective solid waste disposal and management.

2.1 Literature Review

Solid waste management has become an important issue in Nigeria. Piles of wastes are often found by roads, rivers and many other open spaces in cities, and this is causing significant health and environmental problems. The urban population is growing at an alarming rate. While the Nigerian population is increasing by about 2.8% per annum, the rate of urban waste

generation is as high as 5.5% per annum Urban Development Bank (UDBN,1998). This is increasing the difficulties associated with providing an effective solid waste management system. As cities grow, land use becomes increasingly complex and the wastes generated increase in volume and variety (Omota, 20018).

Solid waste management systems (waste storage, collection and transport, resource recovery and recycling, waste treatment and disposal) in Nigeria have been assessed. By different authors. Poor Solid waste management have great effect on the environment and also effect on human health. That is why there is a correlation between the environment and socio- economic developmental. Studies including Boateng, Kofi, Peter, Daniel, George, Kofi & Anthony(2019) studied household willingness to pay for improved solid waste management . the study used primary data from questionnaire and found that households were willing to pay additional amount for improved waste management service.Jones, Evangelinos, Contatinos vand Halvadakis(2010) also carried out a study on social factors influencing perceptions and solid waste management .further studies include Tiller, Jakus and Park (20077) used primary data to find sources of household waste generation in Bazil and found solid waste sources to be generated from abandoned electronics and stationeries Similarly studies like Agunwamba (1998) in a study titled Solid waste management in Nigeria used both qualitative and quantitative techniques to analyze household data on the sources of solid waste generation and effectiveness of government solid waste management systems.The study employed the auto regressive technique and found government waste management system to be in efficient.

Again, Iriruaga(2020) in a study on waste management in Nigeria assert that there is no national policy on waste management plan in Nigeria..Obiora, Jonah, Agunwamba, Uzochukwu and Tochukwu(2020) opined that waste collection rates are higher in high income countries because they have efficient recycling system. Ezebilo(2013) undertook a study on willingness to pay for improved residential solid waste management in Illorin and found more than 80% of the respondents willing to pay an average of N3,660 annually for improved solid waste management**.**

Methods of Solid Waste Disposal

There are different methods or types of solid waste disposal which are universally accepted. According to zeng et al.(2018). The universally accepted methods of solid waste disposal are :

Open Burning

The method of open burning has its negative effect on the environment because it release carbon into thereby causing greenhouse gas effect. It is suitable for cities in coastal areas.

Sanitary Landfilling

This method of land filling is cheap, simple and effective. It involved covering open and dug areas with waste which makes the soil solid Incineration

Though the incineration method has its disadvantage in terms of high construction cost, it is most suitable foe areas where land for land filling is not available. It is also suitable for combustible refuse and can facilitate rapid desiccation of moist refuse.

Many scholars have advocated for three methods or alternatives for waste management. These are: Reduce, Reuse and Recycle

Reduce

To reduce waste can mean to cut back or minimize the amount of waste or trash we generate every day at home. This means choosing not to consume items we need not want and also, using minimum packaging like polythene bags(nylon) and buy locally made products.

Reuse**:**

To reuse means to find new or alternative ways to use materials that would have been thrown out or trashed. This can include converting household items into handicraft etc.

Recycle**:**

The benefits of recycling includes, conversation of natural resources which reduces the need for raw materials extraction .Recycling also, saves energy which decreases energy consumption during production. Furthermore, recycling saves landfill space which extends the life of landfills.

Conceptual Clarification

Public Policy

Public policy refers to the deliberate decisions, strategies, and courses of action formulated and implemented by government institutions to address societal issues and promote the welfare of citizens (Dye, 2013). It encompasses a wide range of activities, including legal frameworks, administrative directives, and social initiatives aimed at achieving political, economic, and social development goals. The primary objective of public policy is to bridge societal gaps, resolve conflicts, and improve living conditions through appropriate interventions.

In Nigeria, public policy has played a crucial role in shaping socio-economic development. However, due to weak institutions, inadequate funding, and poor implementation mechanisms, policy effectiveness has often been constrained (Aremu & Adepoju, 2017).

Social Investment Programs

Social investment programs are structured initiatives designed to foster social and economic development by empowering vulnerable populations through access to resources, skills training, and social protection services (Midgley, 1995). These programs typically aim to reduce unemployment, enhance livelihoods, and build human capital as a pathway to long-term poverty alleviation. Social investments are essential for addressing market failures that marginalize disadvantaged groups and for promoting inclusive development in societies, especially in developing economies.

In the Nigerian context, social investment programs have evolved in response to persistent socio-economic challenges, including high unemployment rates, widespread poverty, environmental challenges and inadequate access to education and healthcare. The federal

government launched the National Social Investment Programme (NSIP) in 2016 as a multi-sectoral initiative to combat these challenges.

Environmental Impact Assessment (EIA)

Environmental Impact Assessment is an important activity/ tool mandated by environmental regulators with the view to evaluate potential environmental effects of aa proposed project or development before decisions are made. It is a systematic process used to evaluate potential environmental consequences of an intended project and the goal is to make informed decision of the environment effect on the public and ways to reduce it. The EIA process involves, screening, coping, baseline study, impact prediction, mitigation measures, review and decision , monitoring and compliance.

Sources of Data

Data for the study was sourced from both primary and secondary sources.. The instrument for the quantitative data collection used structured questionnaires divided into different sections in line with the research objectives and the qualitative aspect sourced data from Key Informant Interviews (KIIs) and focus group discussion (FGD)

Sample Size / Sampling Techniques

The sample size of this research is 400 while the sample size of this research was 396obtained using the recommended sample size formula by Taro Yamani.In line with the objectives of the study, the study employed the simple random sampling technique

Model specification

The linear regression model for this objective is given below as:

$SW_{G=f(}$

$SW_G = \beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + \beta_3 X_{3i} + U_t$

Where SW_G = Solid waste Generation

The X_i are the underlying explanatory variables explained which would change the interpretation of the parameters β

U_t= Error /disturbance term

The study analyzed primary data collected from the administration of questionnaire to households .A total of 400b structured questionnaire were distributed whereas, 396 were return and data was analyzed from the returned 396 questionnaire using simple percentage and Structural Equation Model (SEM). The results are therefore presented below.

Table 1 shows the sources of household waste management in the study area and a priori expectation from the model. Household waste includes; waste from unused electronics, papers, hair from plaiting and barbing etc., other source of household waste are food items from kitchen and sanitary waste.

Table 4.2 shows the frequency and percentages of solid waste generation in the study area. It shows that majority(28.3%) of solid waste is generated from household activities,while(17.2%) solid waste is generated from sanitary pad, hair plaiting and/or barbing. Furthermore, the table shows that the least (16.9%) solid waste is generated from used electronics Table 2 shows the socio-economic characteristics of households in the study area. The result shows that 71% of the population have a family size between 1 to 5,23.5 % have a family size between 6 to 10, 4.3% between 11 to 15 and 0.5% have a family size between 16 to 20. Table 2 also shows the educational level of respondents in the study. The educational level of respondents show that 9.3 % have primary education,36.9 have secondary education and 53.8% have tertiary education. Furthermore, table 2 shows the average income of respondents showing that respondents who earned between ₦ 1- ₦ 20,000 were 1% which is the least, about 9.3% earn income between ₦ 21-40,000, 7.1% earn between ₦ 121- ₦ 140,000. Also, the table shows 3.3% earn about ₦ 201- ₦ 240,000

Table .3 shows the findings which were generated through Confirmatory Factor Analysis (CFA) to provide evidence for the issue of un dimensionality, validity and internal reliability. The result for the CFA indicates relatively a reasonable fit of the four factors model based on the number of f statistics. The table depict that the model is of good fit: the ratio of Chi-square to degree of freedom, RMSEA, GFI, AGF, CFI, TLI and NFI are all within the acceptance range.

Conclusion

The study which examined the household waste management in Yola North Local Government area of Adamawa State was both qualitative and quantitative. Secondary data was sourced from journals, government bulletin and conference papers while primary data was sourced from 400 structured questionnaire distributed to respondents in the study area. The study employed the simple random sampling technique. Findings from the study showed that household waste in the study area is generated from sources like used electronics, plaiting of hair, barbing, kitchen waste etc. Findings also revealed that most households possess tertiary education while others possess primary and secondary education. Results from the study showed that The educational level of respondents show that 9.3 % have primary education,36.9 have secondary education and 53.8% have tertiary education. Furthermore,. A higher educational and income level suggest that such households would be able to afford safer and better waste management systems. Finding from the study revealed the percentages of solid waste generation in the study area. shows that majority(28.3%) of solid waste is generated from household activities, while(17.2%) solid waste is generated from sanitary pad, hair plaiting and/or barbing. Furthermore, the table shows that the least (16.9%) solid waste is generated from used electronics Findings from the study show that waste generation by households in the study area are determined by the socio economic factors like age, family size, education and income of households. In summary, the study found that improper waste disposal has both health and environment conquences. The study further recommended awareness sensitization to households on the need to maintain a clean environment and the provision of waste disposal avenues like incinerators and waste bins by the government . Finally the study recommends a public private Partnership (PPP) in regards to effective waste management

References

Afroz, R., Tudinb, R., Hanakic, K., Masud, M.M., 2011. Selected socio-economic factors af- fecting the willingness to minimize solid waste in Dhaka city, Bangladesh. J. Environ. Plann. Manag. 54 (6), 711–731.

Aremu, J. O., & Adepoju, F. M. (2017). *Policy Implementation and Socio-economic Development in Nigeria: Challenges and Prospects.* Journal of Governance and Development Studies, 4(2), 45-58.

Ávila, J.G., 2013. Cleaning products, environmental awareness and risk perception in Mérida, Mexico. PLoS One 8 (8), e74352. https://doi.org/10.1371/journal.pone.0074352

Babaei, A.A., Alavi, N., Goudarzi, G., Teymouri, P., Ahmadi, K., Rafiee, M., 2015. Household recycling knowledge, attitudes and practices towards solid waste management. Resour. Conserv. Recycl. 102, 94–100.

Banga, M., Lokina, R.B., Mkenda, A.F., 2011. Households' willingness to pay for improved solid waste collection services in Kampala City, Uganda. J. Environ. Dev. 20 (4), 428–448.

Barry, S., Gilg, A., 2007. A conceptual framework for understanding and analyzing attitudes towards environmental behaviour. Geografiska Ann.: Ser. B Human Geogr. 89 (4), 361–379.

Bartelings, H., Sterner, T., 1999. Household waste management in a Swedish municipality: determinants of waste disposal, recycling and composting. Environ. Resour. Econ. 13 (4), 473–491.

Berenguer, J., Corraliza, J.A., Martín, R., 2005. Rural-urban differences in environmental concern, attitudes, and actions. Eur. J. Psychol. Assess. 21 (2), 128–138.

Chung, S.S., Poon, C.S., 2001. A comparison of waste-reduction practices and new environmental paradigm of rural and urban Chinese citizens. J. Environ. Manag. 62, 3–19.

Chidozie, K.U(2011). The people of Adama State and Major tribes of the Gongola. Journal of Sciences and Environmental Sciences. 12(2) 34-38.

Danso, G., Drechsel, P., Fialor, S., Giordano, M., 2006. Estimating the demand for municipal waste compost via farmers' willingness-to-pay in Ghana. Waste Manag. 26, 1400–1409.

De Feo, G., De Gisi, S., 2010a. Public opinion and awareness toward MSW and separate col- lection programmes: a sociological procedures for selecting areas and citizens with a low level of knowledge. Waste Manag. 30 (6), 958–976.

De Feo, G., De Gisi, S., 2010b. Domestic separation and collection of municipal solid waste: opinion and awareness of citizens and workers. Sustainability 2 (5), 1297–1326.

Dhokhikah, Y., Trihadiningrum, Y., Sunaryo, S., 2015. Community participation in household solid waste reduction in Surabaya, Indonesia. Resour. Conserv. Recycl. 102, 153–162.

Dye, T. R. (2013). *Understanding Public Policy* (14th ed.). Pearson Education.

Ferrara, I., Missios, P., 2005. Recycling and waste diversion effectiveness: evidence from Canada. Environ. Resour. Econ. 30 (2), 221–238.

Ferreira, S., Marques, R.C., 2015. Contingent valuation method applied to waste management.

Resour. Conserv. Recycl. 99, 111–117.

Gu, B., Wang, H., Chen, Z., Jiang, S., et al., 2015. Characterization, quantification and man- agement of household solid waste: a case study in China. Resour. Conserv. Recycl. 98, 67–75.

Han, Z.Y., Liu, D., Lei, Y.H., et al., 2015a. Characteristics and management of domestic waste in the rural area of Southwest China. Waste Management. Res. 33 (1), 39–47.

Han, Z.Y., Dan, Z., Shi, G.Z., et al., 2015b. Characteristics and management of domestic waste in a rural area of the Tibetan Plateau. J. Air Waste Management . Assoc. 65 (11), 1365–1375.

Han, Z.Y., Liu, Y., Zhong, M., et al., 2018a. Influencing factors of domestic waste characteristics in rural areas of developing countries. Waste Manag. 72 (2), 45–54.

Han, Z.Y., Duan, Q.Q., Fei, Y.Q., et al., 2018b. Factors that influence public awareness of do- mestic waste characteristics and management in rural areas. Integr. Environ. Assess.

Manag. 14 (3), 395–406.

Hassan, T., Zahra, A., Hassan, A., et al., 2016. Characterizing and quantifying solid waste of rural communities. J. Mater. Cycles Waste Manag. 18 (4), 790–797.

Jones, N., Evangelinos, K., Halvadakis, C.P., Iosifides, T., Sophoulis, C.M., 2010. Social factors influencing perceptions and willingness to pay for a market-based policy aiming on solid waste management. Resour. Conserv. Recycl. 54 (9), 533–540.

Karim Ghani, W.A.W.A., Rusli, I.F., Biak, D.R.A., Idris, A., 2013. An application of the theory of planned behavior to study the influencing factors of participation in source separation of food waste. Waste Manag. 33, 1276–1281.

Khoo, H.H., 2009. Life cycle impact assessment of various waste conversion technologies. Waste Manag. 29, 1892–1900.

Kwetey, S., Samuel, J.C., Wilhemina, A., Abudu, B.D., 2014. Household demand and willingness to pay for solid waste management service in Tuobodom in the Techiman-North District, Ghana. Am. J. Environ. Prot. 2 (4), 74–78.

Martínez-Peña, R.M., Hoogesteijn, A.L., Rothenberg, S.J., Cervera-Montejano, M.D.,

Pacheco-

Mukherji, A.I.E., Enang, R.E., Etim, O. E., & Udoh, S. (2016). An estimation of causal interaction between wate management and stabilization policies on economic growth in Nigeria. *AKSU Journal of Administration and Corporate Governance, 4(1), 15-32.*

Midgley, J. (1995). *Social Development: The Developmental Perspective in Social Welfare.* Sage Publications.

Pena , O. A., Babatunde, O. B., Habeebulahi, O. A., & Olamide, M. I. (2013). Effects of waste management and impact on economic growth in Nigeria: an analysis. *Journal of Economics and Allied Research, 9(2), 256-270.*

Triguero, E. D., Okon, B. & Ayeni, A. W. (2016). The impact of tax revenue on economic growth in Nigeria. *International Journal of Multidisciplinary Research and Growth Evaluation, 5(1), 566-571.*

Wang, P. C, Perfect, N.Y, Jones, S.P, & Daiti. E.S. (2018). Impact of Money Market Reforms On Economic Growth Of Nigeria 2000 – 2017. *Archives of Business Research, 7(SP), 122-134*

Zeng , S, Gang, S.Musa.P, Akwai,G,&Ishaku,H.O (2018). The impact of waste on economic development: evidence from Lao PDR. *Global Journal of Human Social Science: E Economics*, 17(2), 1-13.

TABLE4. 1: Sources of Household Solid Waste Generation

S/No	Variable Label	Variable Code	Expected Sign	Definition of Variable
1.	SWG	SW	Dependent	Source of waste generated by households
2.	SWO	X_1	+	Source of waste from other sources like electronics, papers, plaiting, shaving etc.
3.	SWF	X_2	+	Source of waste from food items
4.	SWS	X_3	+	Source of waste from sanitary/sanitation

Source: Source: Author's computation 2026

TABLE4. 2: Sources of Household Solid Waste Generation

Category	Frequency	Percentage (%)
Waste from households	112	28.3
Waste from other Sources	78	19.7
Waste from sanitary pads/plaiting/shaving	68	17.2
Waste from factory	71	17.9
Waste from used electronics	67	16.9
Total	**396**	**100**

Source: Author's computation 2026

TABLE4. 3: Socio Characteristics of households: Family Size, education, Income.

Income	Frequency	Percent
Family Size		
1 – 5	284	71.7
6 – 10	93	23.5
11 – 15	17	4.3
16 – 20	2	0.5
Educational Level		
Primary	37	9.3
Secondary	146	36.9
Tertiary	213	53.8
Average Income		
1,000 – 20,000	4	1
21,000 – 40,000	37	9.3
41,000 – 60,000	100	25.3
61,000 – 80,000	73	18.4
81,000 – 100,000	55	13.9
101,000 – 120,000	35	8.8
121,000 – 140,000	28	7.1
141,000 – 160,000	20	5.1
161,000 – 180,000	17s	4.3
181,000 – 200,000	14	3.5
+ 201,000 – 240,000	13	3.3.
	396	100

Source: Author's computation 2026

Table 4.4: Individual Confirmatory Factor Analysis CFA (Model Fit) and Reliability Test

Variables	RMSEA	GFI	AGFI	CFI	TLI	NFI	CHISQ/DF	PV	Cronbachα

Household level of income	0.053	0.911	0.90s9	0.998	0.912	0.909	3.399	0.0042	0.701
Number of Family Member	0.075	0.952	0.978	0.943	0.954	0.909	1.767	0.0347	0.754
Source of waste	0.086	0.901	0.944	0.976	0.918	0.914	4.231	0.0235	0.732
Waste Disposal	0.081	0.987	0.955	0.909	0.976	0.909	2.276	0.023	0.721

Source: Generated by the author, using Amos,2026