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DETERMINANTS OF TRADITIONAL MEDICINE USE IN MAIDUGURI, BORNO STATE, NIGERIA

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Abstract

People are exposed to the dangers of traditional medicine with its attendant consequences daily. Clients often complain of itching, diarrhea, stomach ache, and rashes etc. Yet they continue to patronize traditional medical practitioners and practices. This health-seeking behaviour need to be investigated. The study adopted a descriptive method in which quantitative technique was applied Sample sizes of four hundred (400) respondents who are adults between the ages of 20-65 years were selected using Yamane's formula. Three hundred and eighty-four (384) questionnaires were retrieved, making 96% return rate. The study employed descriptive and inferential statistics for data analysis. Some of the findings of the study revealed that socio-economic factors were the major determinants of traditional medicine use.. The study concludes that socio-economic factors such as income, occupation, place of residence and educational status were determinants of traditional medicine use.

Keywords: Determinants, Use, Traditional Medicine

1. Introduction

Human beings live on a continuum of health and illness. When one falls ill or has a perceived threat to health, the person will have to seek remedial measures through various medical interventions. The intervention could be sought through either modern conventional medicine or age-long traditional medicine (TM). Traditional medicine in Africa developed over generations within various societies before modern medicine and consisted of medical aspects of traditional knowledge. World Health Organization (WHO, 2008) reported that up to 80 per cent of the population in African and Asian countries relied on traditional medicine for their primary health care needs. Consequent upon this, most tribes and cultures have their indigenous traditional medicine. For instance, it can be found among the Kanuri of Borno and several others (Tom, 2014).

In Nigeria, the development of traditional medical practice is deeply rooted in the cultures and traditions of the people. And in most instances, it is an integral part of the culture and belief system. However, there are variations in the practitioners and practices across the country. For example, among the Yoruba of southwestern Nigeria, herbs, charms, magic, animal waste, sacrifices and rituals for healing and long life is common phenomenon. Amongst the Kanuri of Borno, the use of onions for measles is a common sight among other practices (Tom, 2014).

Even though traditional medicine is said to be firmly and deeply rooted in the people's culture and beliefs, it is not without some drawbacks. For instance, the practitioners lack the required skills to make the correct diagnosis and treat complicated diseases. Similarly, traditional medicine lacks standard dosage and may not be subjected to scientific verification. Although,

according to Erinoso (2006), the practitioners are believed to have supernatural powers, sadly, some are found to be unscrupulous and lack equipment for conducting a physical examination or a test.

All these shortcomings notwithstanding, the traditional health care system has, till today, continued to thrive. TM has been practiced in the rural areas where over 70 per cent of the population live and in the urban centres where the populace is deemed to have greater access to modern health care facilities. The patronage for traditional medicine cuts across all strata of society. This phenomenon could be attributed to the widely held belief that traditional medicines are affordable, accessible, and considered efficacious.

However, from anecdotal evidence, lack of precision in traditional medicine poses many challenges, drawing from the fact that all manner of substances are used and many so called practitioners engage in dispensing traditional medications in Maiduguri. There seems to be a convergent opinion that economic and sociocultural factors tend to influence all types of medicines in most societies. There is evidence of a pervasive reliance on traditional healers in economically disadvantaged communities, even for severe diseases (Chibwana, Mathanga and Chikhumbal, 2009). Can the same be said of traditional medicine in the study area? It appears that there some compelling forces that attract people to traditional medicine rather than modern medicine. These motivational factors for the benefit of traditional medicine need to be investigated.

Statement of the Problem

In spite of all those efforts to provide equitable health care, people are being exposed to the dangers of traditional medicine daily with its attendant consequences. Clients often complain of having vomiting, diarrhoea, itching, and other side effects, which can be dangerous to their health after using such substances. However, there seems to be a phenomenal increase in the patronage of traditional medicine practitioners and vendors in this part of the world, despite the availability of modern health care services. Consequently, the number of persons who might suffer

from unwanted effects of using traditional medicine could be on the increase. If this trend continues, many people might suffer from complications that may impose serious health problems or permanent disabilities. It, therefore, portends danger to the general health and wellbeing of the population. This could undermine the national health policy of Nigeria and the general productivity of its citizens.

Objectives of the Study

The objectives are to:-

- i. examine the socio-economic factors that determine traditional medicine use in Maiduguri ;
- ii. examine the effects of respondents attitudes on traditional medicine use intention;
- iii. assess the impact of subjective norm on traditional medicine use intention;
- iv. determine whether or not traditional medicine use intention and use is within the volitional control of users;

2. Literature Review

The World Health Organization (2008) defines traditional medicine as "the sum total of knowledge, skills, and practices based on the theories, beliefs and experiences indigenous to different cultures that are used to maintain health, as well as prevent, diagnose, improve or treat physical and mental illness". Further the term "complementary" and "alternative" medicine (and sometimes also non-conventional or parallel medicine) is used to refer to a broad set of healthcare practices that are not part of a country's tradition, or not integrated into the dominant healthcare system". Based on this broad definition, it may be hard to find a region without some form of Traditional Complementary and Alternative Medicine (TCAM) practice or the state of knowledge. It is often called in various ways: traditional medicine, alternative medicine, complementary medicine, natural medicine, herbal medicine, phytomedicine, non-conventional medicine, indigenous medicine, folk medicine, and ethnomedicine.

Before the advent of modern medicine, traditional medicine used to be the dominant medicinal system available to millions of people in Africa in both rural and urban communities. Indeed, it was the only source of medical care for a greater population by that population as at that time (Romore-Daza, 2012). However, there are strong indications that traditional health care systems are still in use by the majority of the people not only in Africa but across the world. In Africa, the individual practitioners are variously addressed as *Babalawo*, *Adekunle* or *Onisekun* among the Yoruba speaking people of Nigeria; *Abia* among the Ibibio community of Nigeria; *Dibia* among the Igbo of Nigeria; *Boka* among the Hausa speaking people of Nigeria, and *Sangoma* or *Nyanya* among the South Africans (Cook, 2009).

Several classifications have been attempted for defining and classifying traditional medicine. It is pointed out that there is no homogeneous body of medical thought and practice which can be put under one name (Patwarthan 2005). WHO strategy (2002) also makes a similar remark that the term 'alternative' "refer to large heterogeneous categories defined by what they are not than what they are". The bottom line is that "traditional medicine is a collection of knowledge, skills and practices for health maintenance as well as prevention, diagnosis, improvement or treatment of physical and mental diseases" (Abdullahi, 2011).

Several factors have been adduced to be determinants of traditional medicine use. These factors may include; socioeconomic/ demographic, psychosocial, geographic location, consumer satisfaction, state of accessibility, health policy and characteristics of TMPs. Socioeconomic characteristics are age, gender, religion, income, education, employment status, ethnicity, marital status and insurance. Psychometric analysis includes variables which encompass belief system, custom, norms, values, perception of care, nature of disease and health status. Geographic location could be rural or urban. Consumer satisfaction borders around quality, safety, efficacy, accessibility and flexibility of traditional medicines. State of accessibility considers social distance, cost of care/services, time taken to cure

illnesses, and client attitude. Health policy goes along with utilization of health services as it impacts on location of health facilities, organizational structure and decision making process. Finally, characteristics of TMPs include their attitude, experience, training, and affective behaviour (Amzat, 2014).

The significance of TM in the diagnosis, prevention, treatment and management of various diseases, particularly in developing countries has been amply demonstrated in some studies (Chibwana *et al.*, 2009). However, multiple explanations and motivation for the high utilization rate of various TM therapies and traditional healers have long been unravelled. Various cited precursors independently include individuals and groups' socio-demographic, economic, psychosocial, and anthropological factors.

3. Materials and Method

This study was carried out in Maiduguri the capital city of Borno State, North Eastern Nigeria. Maiduguri is located on latitude $11^{\circ} 47'$ North and latitude $11^{\circ} 52'$ North and longitude $13^{\circ} 06'$ East and longitude $13^{\circ} 11'$ East. It occupies an area of 50,778 square kilometers (Abubakar, 2017). Maiduguri lies on relatively flat terrain of the vast undulating plain which slopes greatly towards Lake Chad (Waziri, 2012).

There are several health facilities in the metropolitan areas. They include primary health care services, secondary health facilities and Tertiary health facilities and many private hospitals and clinics. Also found are Alternative Medicine Centres and Herbalists shades scattered in many major streets and corners.

3.1 Population of the Study

The population of Maiduguri as reported during the 2006 census was 540, 016 (NPC, 2006). In this regard the projected population as at December 2020 is 1,156,734 (NPC, 2021). The target population of the study comprised of residents of Maiduguri who are users and non-users of traditional medicine. Criteria include being adult, resident within the study area, and have used TM in the past or is currently using same.

3.2 Sample Size

This number was drawn from the total population of Maiduguri. The sample size for this study is 400. Yamane (1967), sample size of a given population determination formula was used to calculate the sample size for the quantitative study which involves the administration of questionnaire for the study.

3.3 Sampling Technique

Multistage sampling technique was used for this study. In the first stage two districts were selected. To The study districts are Gwange district and Maisandari district. Gwange district is urban in nature while Maisandari district have some semi-urban settlements In the second stage, twelve (12) wards were selected from the study districts for the research based on simple random sampling techniques In the third stage, convenience sampling technique was applied to select the actual subjects.

3.4 Method of Data Collection

A questionnaire was developed to collect the quantitative data mainly from the users of traditional medicine from the study area Questionnaire was used to collect data on demographic and socio-economic

background about the respondents Questionnaire was administered by the research assistants to the respondents and the purpose of the questionnaire was to collect factual and/or attitudinal data for measurement/analysis

3.5 Method of Data Analysis

The analysis procedure was done in stages. Firstly, based on the adopted rating scales, responses were subjected to both reliability test and Exploratory Factor Analysis (EFA). Secondly, the summated scores for the regression model that was employed in the study were obtained. Thirdly, descriptive analysis was done Specifically, multiple regression, and factor analysis was used. Exploratory factor analysis (EFA) using SPSS 22.0 was conducted to examine the fit of the major to the TPB constructs.

4. Results and Discussion

4.1 Socio-demographic Data

Several variable indexes were developed from the socio-demographic characteristics. The socio-demographic background provided an avenue of measuring individual characteristics against several factors that determine the use of traditional medicine.

Table 1: Demographic Characteristics of the Respondents

n= 384		
Variables	Frequency	Percentage (%)
Gender		
Male	264	68.8
Female	120	31.3
Age		
20-25	13	3.4
26-35	170	44.2
36-45	190	49.4
46-55	6	1.5
56-65	5	1.3
Marital Status		
Single/Widowed/Widower /Divorced	85	22.1
Married/ Cohabitated	299	77.9
Level Of Education		
Never-been to school	87	22.7
Basic education	97	25.2

Secondary	107	27.9
Tertiary	93	24.2
Religious Belief		
Islam	299	77.9
Christianity	85	22.1
Employment Status		
Employeds	196	51.0
Unemployed	188	49.0
Nature of Occupation		
Farming	158	41.1
Trading	59	15.4
Government Employee	97	25.3
Schooling	40	10.4
Others	30	7.8
Working Experience		
None	13	3.4
1-5 years	326	84.9
6-10 years	45	11.7
Ethnic Group		
Kanuri	147	38.3
Shuwa Arab	101	26.3
Babur/Bura	16	4.2
Marghi	31	8.1
Hausa/ Fulani	61	15.9
Igbo	15	3.9
Other	13	3.4
Household Size		
< 3	71	18.5
4-6	234	60.9
7-10	38	9.9
11-15	19	4.9
16-19	12	3.1
20 and above	10	2.6
Household income		
< 50000	226	58.0
51,000-100,000	93	24.2
101,000-150,000	33	8.6
151,000-200,000	9	2.3
201,000 and above	23	
Current State of Health		
Poor	0	
Satisfactory	103	
Good	283	
Very Good		

Source: Field Survey, 2021

Socio-economic Factors Determining the Use of Traditional Medicine

A multiple linear regression analysis was performed from the data collected from the field to assess the

demographic, socio-economic and anthropological factors that influence the outcome variables, traditional medicine use in the study area. Table. 2 present the results from the regression analysis.

Table 2: Summary of Multiple Regression Analysis on the Effects of Socio-economic Factors on traditional medicine use in Maiduguri Metropolitan Council

Variable	Coefficient	Std. Error	t-value	P-value
(Constant)	-1.036	0.831	-1.247	0.213
Age of the Respondents	0.317	0.079	4.006	0.000
Sex	-0.007	0.080	-0.083	0.934
Marital status	0.497	0.286	1.738	0.083
Educational Status	0.259	0.087	2.965	0.003
Education of Partner	-0.042	0.029	-1.424	0.155
Religion	0.269	0.088	3.068	0.002
Employment Status	0.069	0.071	0.981	0.327
Nature of occupation	-0.018	0.017	-1.067	0.287
Working Experience	-0.033	0.204	-0.160	0.873
Ethnic Group	-0.005	0.016	-0.311	0.756
Household Size	0.014	0.029	0.471	0.638
Household Income Level	-0.079	0.023	-3.393	0.001
Heath insurance	0.151	0.093	1.628	0.105
Place of Residence	-0.019	0.084	-0.228	0.820
Current State of Health	-0.183	0.081	-2.262	0.024
F-value = 6.311				0.000
R ² = 0.751				
Dependent Variable: Use of traditional Medicine				

Independent Variable: Current State of Health, Household Income Level, Religion, Marital status, Sex, Education of Partner, Nature of occupation, Household Size, Ethnic Group, Educational Status, Place of Residence, employment Status, Working Experience, Age of the Respondents, Heath insurance

Source: Field Survey, 2021

Table.2 shows socio-economic factors as determinants of traditional medicine use in Maiduguri Metropolitan Council. The pseudo R² indicates that the model is suitable for explaining socio-economic factors as determinants of traditional medicine use in Maiduguri Metropolitan Council. Five of the variables included in the model were significant in explaining socio-economic factors as determinants of traditional medicine use in Maiduguri Metropolitan Council. These variables are: Age, Educational Status, Religion, Household Income Level and Current State of Health respectively.

Effects of Respondents attitude on the intention to use Traditional Medicine

Here the researcher considered the effect of attitude of respondents on traditional medicine use intention. To answer the question a linear regression was obtained from the data and likert scale scores were calculated with the percentage scores. The result is then summarized.

Table.3: Summary of Simple Linear Regression Analysis on the Effects of Respondents attitude on the intention to use Traditional Medicine

Variable	B	S. Error	t-value	P-value	Remark
Respondents' attitude	1.023	.114	9.006	.000	S
Constant	-.153	.026	-5.902	.000	S
$R^2 = .084$					
Dependent variable: Intention to use and use of traditional medicine (IUTM)					
Independent variables: Respondents' attitude ; S = Significant					
Source: Field Survey, 2021					

Table 3 shows a significant effect of respondents' attitude on the intention to use traditional medicine. This is because the P-value (0.000) of the coefficient of intention to use and use of traditional medicine is less than the alpha value ($\alpha = 0.05$). Hence, respondents' attitude has significant influences on intention to use and use of traditional medicine in Maiduguri. The $R^2 = 84\%$ indicates that the model is suitable for explaining the effect of respondents' attitude on the intention to use and use of traditional medicine in Maiduguri.

Attitude of Maiduguri residents towards traditional medicine use was found to be as significant and strongest predictor of their intention to seek traditional medicine services. This finding is consistent with previous TPB studies assessing the intent to use traditional medicine (Rochelle, et al, 2015); Yoruba peoples intention to use traditional medicine (Falodun and Imieje, 2013), traditional medicine use intention amongst the Esan people of Edo by (Egharave, 2015).

More than 80% of the respondents had a positive attitude towards the use of traditional medicine as shown on Appendix 6. This finding is consistent with previous

findings from the study by (Xia *et al*, 2021); aimed at determining patient-perceived value of traditional medicine use. (Dzulkipli, *et al*, 2019) found that traditional medicine use was considered to be valuable, satisfactory and financially beneficial to patients (Al Hasan *et al*, 2019). In this current study, respondents were most positive with services involving the TMPs and were the least positive with services involving OMPs. Similar results were evident in past research by (Asare, 2015). Like this current study, in a study by services involving the use of TMPs had the highest mean score.

Effects of Subjective Norms on Traditional Medicine Use Intention

Here the researcher considered the effect of subjective norms on traditional medicine use intention. Similarly a simple linear regression, mean deviation score, likert score and percentages were elicited from the data to answer the research question. The results obtained were as follows.

Table.4: Summary of Simple Linear Regression Analysis on the Effects of Subjective Norms on Traditional Medicine Use Intention

Variable	B	S. Error	t-value	P-value	Remark
Subjective norm	0.253	0.067	3.792	0.000	S
Constant	1.782	0.473	3.770	0.000	S
$R^2 = 0.815$					
Dependent variable: Traditional medicine use intention					
Independent variables: Subjective norm					
S = Significant					
Source: Field Survey, 2021					

Table 4 shows a significant effect of subjective norm on traditional medicine use intention in Maiduguri Metropolitan Council. This is because the coefficient of subjective norm is less than the alpha value ($\alpha = 0.05$). Hence, subjective norm has significant effect on traditional medicine use intention in Maiduguri. $R^2 = 82\%$ indicates that the model is suitable for explaining the effects of subjective norm on traditional medicine use intention in Maiduguri.

Table 5: Summary of Simple Linear Regression Analysis on Traditional Medicine Use Intention and Volitional Control of Users

Variable	B	S. Error	t-value	P-value	Remark
Traditional medicine use intention	3.673	.052	71.278	.000	S
Constant	.056	.026	2.182	.030	S
$R^2 = 0.645$					
Dependent variable: Traditional medicine use intention (TMUI)					
Independent variables: Volitional control of users (VCU); S = Significant					
Source: Field Survey, 2021					

Table 5 shows traditional medicine use intention is within the volitional control of users. This is because the P-value (0.000) of the coefficient of traditional medicine use intention is less than the alpha value ($\alpha = 0.05$). Hence, traditional medicine use intention is within the volitional control of users in Maiduguri Metropolitan Council. The $R^2 = 65\%$ indicates that the model is suitable for explaining the effect of traditional medicine use intention on volitional control of users in Maiduguri.

Table 6: Summary of Simple Linear Regression Analysis on Traditional Medicine Use and Volitional Control of Users

Variable	B	S. Error	t-value	P-value	Remark
Traditional medicine use	.942	.140	6.753	.000	S
Constant	.736	.066	11.176	.000	S
$R^2 = 0.844$					
Dependent variable: Traditional medicine use (TMU)					
Independent variables: Volitional control of users (VCU); S = Significant					
Source: Field Survey, 2021.					

Table 6 shows traditional medicine use is within the volitional control of users. This is because the P-value (0.000) of the coefficient of traditional medicine use is less than the alpha value ($\alpha = 0.05$). Hence, traditional

Traditional Medicine Use Intention and Volitional Control of Users

Here the researcher considered whether or not traditional medicine use intention is within the volitional control of users. To answer this question simple linear regression analysis, likert score summation and percentage was done. The result of which is presented herein.

Traditional Medicine Use and Volitional Control of Users

In seeking answer as to whether or not traditional medicines use is within the volitional control of users. As for other research questions, simple regression analysis, likert scale score and descriptive statistics is used to seek answers to the question.

medicine use is within the volitional control of users in Maiduguri Metropolitan Council. The $R^2 = 84\%$ indicates that the model is suitable for explaining the

effect of traditional medicine use on volitional control of users in Maiduguri Metropolitan Council.

In this study, perceived behavioural control, which is, volitional control, was found to be a statistically significant predictor of intention to use and use TM. This finding is consistent with the results from previous studies on pharmacists and consumers in which perceived behavioural control was found to be a significant predictor of pharmacists intent to provide MTMS (Herbert *et al*, 2006) and consumers' intention to adapt PVAS (Tan *et al*, 2016)

This data indicate that, the higher level of perceived behavioural control the residents of Maiduguri had, the more likely they intended to use traditional medicine. Among collected studies, most of them found similar results. Perceived behavioural control was a significant predictor of TM use intention for different groups of people. Only a few studies (Huchting *et al*, 2008) found

perceived behavioural control not a significant predictor of intention to use TM.

Ajzen (2002) asserted that including both self – efficacy and controllability items could boost the internal consistency of the perceived behavioural control items into two perceived behavioural control sub – categories; controllability and self – efficacy. The results indicated that both self – efficacy (path coefficient = 31, $P < .0001$) were significant in predicting traditional medicine use intentions.

Effects of Traditional Medicine Use Intention on Actual Use

Here the study seeks answer to the effect of traditional medicine use intention on actual use. A simple linear regression, descriptive statistics and likert score calculations were carried out and result presented as follows.

Table 7: Summary of Simple Linear Regression Analysis on the Effects of Traditional Medicine Use Intention on Actual Use

Variable			B	S. Error	t-value	P-value	Remark
Traditional medicine use intention			1.798	0.420	4.282	0.000	S
Constant			0.302	0.055	5.518	0.000	S
$R^2 = 0.715$							
Dependent variable: Actual Use							
Independent variables: Traditional Medicine Use Intention; S = Significant							
Source: Field Survey, 2021							

Table 7 shows a significant effect of traditional medicine use intention on actual use in Maiduguri Metropolitan Council. This is because the coefficient of medicine use intention is less than the alpha value ($\alpha = 0.05$). Hence, traditional medicine use intention has influences on actual use in Maiduguri. The $R^2 = 72\%$ indicates that the model is suitable for explaining the effect of traditional medicine use intention on actual use in Maiduguri.

Conclusion

The study has filled gaps in literature as regards determinants of TM utilization among service users in Maiduguri. Moreover, the study concludes that the

decision to use TM is greatly influenced by people's attitude, subjective norm and perceived behavioural control as well as people's socio – demographic characteristics. These findings are relevant for the ongoing empirical and theoretical debate regarding TM utilization.

Comprehensively, the study has provided a forum for future research endeavours to adopt and apply this intellectual model in studies relating to utilization of TM particularly in Africa and other developing communities.

In a nutshell, the study concludes that socio-economic factors were the determinants of traditional medicine use in Maiduguri Metropolitan Council. The theory of planned behavior was found to be a predictor of determinants of traditional medicine use in Maiduguri. Hence, the following findings; respondents' attitude has significant influence on the intention to use and use of traditional. Subjective norm has significant effect on traditional medicine use intention in Maiduguri. Traditional medicine use is not within the volitional control of users.

Recommendations

The outcome of study as a result of the research findings shows that a number of strategies ought to be done in order to save the lives of teeming users of traditional medicine and also to improve upon and modernize TM practice in the study area. Some of the

following recommendations are therefore meant to realize the objective of improving TM.

- i. Developing a Model that would encompass TMPs in Health Planning.
- ii. Strengthening the Healthcare System
- iii. Poverty Alleviation and Empowerment of the Populace
- iv. Health Education (Public Enlightenment) on safety, efficacy and toxicity of TM
- v. Establishment, development and standardization of traditional medical practice.
- vi. Education and formal training of TMPs
- vii. Registration of Traditional Medical Practitioners and their Products/Services
- viii. Inclusion of Traditional Medicine on the National Health Insurance Scheme

References

- Abdullahi, A. A. (2011). Trends and Challenges of Traditional Medicine in Africa. *African Journal of Traditional Complementary Medicine* 8(5): 115-123.
- Abubakar, B. (2017). *Origin and Meaning of Maiduguri* UNITAR –Geneva. Retrieved 12th June 2020.
- Ajzen, I. (2001). Nature and Operations of Attitude. *Annual Review of psychology* 52(1):27-58.doi.10.1146/annurev.psych.52.1.27.
- Al Hassan, S; Muzumdar, J.M; Nayak, R; and Wu, W.K. (2019). *Using the Theory of planned Behaviour to Understand Factors Influencing South Asian Consumer's Intention to Seek Pharmacist-Provided Medication Therapy Management Services*. *Pharmacy* 2019, 7188; doi. 10.3390/pharmacy/7030088.
- Amzat, Jead Razum, O.(2014). *Medical Sociology in Africa*, New York Springer.
- Asare, M. (2015). Using the Theory of Planned Behaviour to Determine the Condom Use Behaviour Among College Students. *American Journal of Health Studies*. 2015; 30(1) : 43-50.
- Chibwana, A. I., Mathanga, D. P. and Chinkhumba, A. (2009). Socio-cultural Predictors of Health-Seeking Behaviours for Febrile Under-Five Children in Mwanza-neno District, Malawi. *Malor Journal* 2009; 8; 219. Doi.10.1186/1475-2875-8-219.
- Cook, C.T. (2009). 'Sangomas: Problem or Solution for South Africa's Health Care System'. *Journal of the National Medical Association* 10(3): 261-265.
- Dzulkipli, M.R.; Azizam, N.A.; Maon, S.N.; Abdulaziz, N.I.S.; Azian, N.M.; Azmi, N.A.M.N.; Razak, N.S. (2019). Application of Theory of Planned Behaviour to Predict the Intention to Purchase Complementary and Alternative Medicine. *International Tourism and Hospitality Journal* 2(3):1-07 (2019) ISSN: 2616-4201.

- Egharevba, H.O., Ibrahim, J.A., Kassam, C.D. and Kunle, O.F. (2015). Integrating Traditional Medicine Practice into the Formal Health Care Delivery System in the New Millennium. The Nigerian Approach: A review. *International Journal of Life Sciences Vol.4, No.2, 2015. Pp 120-128.*
- Falodun, A. and Imieje, V. (2013). Herbal Medicine in Nigeria: Holistic Approach. *Nigerian Journal of Sciences and Environment, Vol. 12 (1) (2013).*
- Huchting, K., Lac, A., LaBrie, W.J. (2008). An Application of the Theory of Planned Behaviour to Sorority Alcohol Consumption. *Addictive Behaviours, 33 (4), 538-551.*
- National Population Commission (NPC, 2021). *Population Distribution by Age, Sex and Schooling Status (State and Local Government Area) Abuja: Nigeria.*
- National Population Commission (NPC, 2006). *National Population Commission. Census Data, Borno State Nigeria, Federal Republic of Nigeria, Abuja.*
- Patwardhan, B. (2005). *Traditional Medicine: A Novel Approach for Available, Accessible and Affordable Health Care*, A paper submitted for Regional Consultation on Development of Traditional Medicine on the South-East Asia Region, Korea, World Health Organisation, 2005.
- Romero-Daza, N. (2012). Traditional Medicine in Africa. *Journal of the American Academy of Political and Social Science, 583: 173-176.*
- Waziri, M. (2012). *Spatial Pattern of Maiduguri City: Researchers Guide*. Adamu Joji Publishers No 13 Mangwarori Street, Sabon Titin Mandawari, Kano city, Kano, Nigeria
- W.H.O (2002). WHO Traditional Medicine Strategy 2002-2005, *World Health Organisation, 2002.*
- World Health Organization (W.H.O). (2008). Fact Sheet on Traditional Medicine.
- Yamane, T. (1967). *Statistics: An Introductory Analysis* 2nd edition. New York: Harper and Row.