Available online at www.equijost.com
Equity Journal of Science and Technology, 2021 8(1): 116 - 122
ISSN 2354-1814; E-ISSN 2682-5961
EQUIJOST
An Official Publication of Kebbi State University of Science and Technology, Aliero, Nigeria

Socio-economic Factors Influencing Extension Workers' Effective use of Knowledge Management in Agricultural Extension Services

*[1]Yusuf S. Suleiman, [2]Taofiki Aminu, [1]Yahaya Kaka, [3]Faith I. Agbomakha, [1]Abdullahi G. Auwal, [4]Danlami H. Yakubu

[1]Department of Agricultural Economics and Extension, Kebbi State University of Science and Technology, Aliero Kebbi State, Nigeria
[2]Department of History and International Studies, Federal University, Gusau
[3]Department of Vocational and Technical Studies, Federal College of Forestry Mechanization, Afaka Mando Kaduna State, Nigeria.
[4]Department of Agricultural Extension and Rural Development, Usmanu Danfodiyo University Sokoto, Nigeria.

*Corresponding author's email: sysherif@yahoo.com

Received: Apr 21, 2021: Accepted: Jun 22, 2021; Published Online: Jul 30, 2021

Abstract
The study assessed the factors influencing extension workers effective use of Knowledge Management (KM) in Sokoto State, Nigeria. Purposive sampling procedure was used to sample respondents from the study area and Extension Workers were selected from Sokoto Agricultural Development Project (SADP). Socio-economic characteristics were using structured questionnaire and a total of 188 respondents were sampled and data collected analysed using descriptive statistics and logit model as tools of analysis. The result of the study showed that 74.4% of the extension workers were male and majority (79.8%) were married. More so, 35% of the extension workers are within the age range of 31 – 40 years with household average size of 5-10 children. Majority (79%) of the extension workers had tertiary education. (35%) had experience ranging from 21-25 years on extension service delivery. About 41% of respondents used motor cycle as a mean of transportation. Result of logit model shows that marital status, level of education, service experience, cosmopolitness and means of transportation had positive and significant relationship with effectiveness of KM whereas household size and rank of extension workers had significant and negative relationship with KM. It is therefore recommended that KM be encouraged and disseminated through top management approach in SADP. This will avail quality and better extension service delivery by extension agency because the vast knowledge and experience garnered on effective extension service delivery by top management officer will be shared and passed on to junior officers. This will go in line with strengthening and improving the capacity building of extension workers.

Keywords: Knowledge, Management, Agriculture, sharing, Extension Workers

1. Introduction

Knowledge Management (KM) is an approach that supports identifying, captioning, sharing, applying and creating knowledge as well as making knowledge accessible and usable for an intended audience. Knowledge Management comprises of a range of strategies and practices used in an organization to identify, create, represent, distribute, and enable adoption of insights and experiences. Such insights and experiences comprise knowledge, either embodied in individuals or embedded in organizational processes or practice (National Institute of Agricultural Extension Management [1]. On other hand, Agricultural Extension is defined as system for the exchange of information and transfer of skills between farmers, extension workers and researchers for the purpose of assisting farmers to identify farming production problem [2]. Therefore, KM is expected to improve the effectiveness of agricultural extension services through the approach that supports, identifying, captioning, sharing, applying creating knowledge as well as making knowledge accessible and useable for the farmers within the shortest period having engaged with extension agent. However, this research amid at investigating Socio-economic factors influencing the use of knowledge management among agricultural extension workers in Sokoto State Nigeria.

The Agricultural Extension workers need to embrace the effective use of knowledge in order to meet up with modern era of globalization where knowledge has been recognized as a valuable organizational resource from a strategic perspective [4] and as an important factor for competitive advantage, effective organizational performance and success [5]. Hence, KM has become one of the foremost agenda in many organizations, research institutions and academics [6,7]. American Productivity and Quality Center (APQC) defines KM as "an emerging set of strategies and approaches to create,

https://dx.doi.org/10.4314/equijost.v8i1.20

safeguard and use knowledge assets (including people and information), which allows knowledge to flow to the right people at the right time so that they can apply these assets to create more value for the enterprise [8]. Effective (KM) have always been attributed as important factors for human performance and have been defined by Davenport as "a high value form of information that is ready in place to apply for decision making support system [9].

Agricultural Organizations and Extension Services across the world have increasingly become information and knowledge hunters for farmers to ensure they maintain a competitive advantage as result of effective KM. The use of latest and emerging technologies to capture, store, share, use and archive knowledge improves the organizations' business activities and provides them the comparative and completive advantage in extension service delivery. This leads to higher levels of productivity and much needed profitability among Extension Workers and the Farmers. One of the main areas of research on the facilitation of enhanced learning/change processes on farm and extension workers has been understanding how on farm change is influenced by the extension workers and farmers' personal, family, business, industry and regional characteristics.[10] argues that Agriculture is a social activity with distinctive farming styles. The social context within which farm management occurs must be understood if research and extension are to be successful. Other authors focus on the need to understand and address the needs of the farm family, and the farm family business rather than the individual farmer [11].

Moreover, effective extension professionals can be assets of agricultural extension services in Nigeria and particularly in Sokoto State. Diverse and dynamic agricultural systems, advancing science and technologies, changing socio demographics, increasing globalization and growing competition for resources demand agricultural extension professionals to be proficient in the technical aspects of their areas of expertise, as well as in the processes and delivery of the services[12] In other words, the need and demand for effective extension professionals to demonstrate a higher level of professionalism in their services are growing as the problem of agriculture production in Nigeria particularly in innovations and advisory services that will solve the persistent farmers and Herdsmen conflict. Maddy opined that, "Extension Worker should possess the necessary knowledge on KM to anticipate and deliver quality educational programmes of relevance and importance to our publics" [13].

The objective of the study is to describe the socio-economic characteristics of the agricultural extension workers in the study area;

2. Methodology

Survey design was used for the study and data was collected purposively from Sokoto Agricultural Development Project (SADP) Head Quarter and the Two (2) Zonal Offices. Purposively sampling techniques were used to select one hundred and eighty eight (188) extension workers. Purposive sampling was used to ensure that only extension workers who have acquitted with KM were selected. A structured questionnaire and interview were used for data collection and analyzed using descriptive statistic and logit model.

2.1 Logit Model

In logit regression, the response variable (Y) is a linear function of the coefficients (B0, B1, etc.) that correspond to the predictor variables (X1, X2, etc.). A typical model would look like:

$$Y = B0 + B1 * X1 + B2 * X2 + \cdots \ldots Bn * XN + \varepsilon$$

Where Y= Knowledge Management, B = bate (Coefficient)
Ɛ = Error term
X = Variables (X1 - Xn);
X1 = Sex (Biological sex male or female);
X2 = Marital Status (The state of being married or single); X3 = Age (Age of the Extension Workers in years)
X4 = Level of Education (number of years spent in schooling) X5 = Household size (number person in the house)
X6 = Working Experience (the number of years the Extension Workers put in service) X8 = Location (Location of duty of Extension workers either in the Head Office or Zonal Offices or Urban and Rural)
X9 = Means of Transportation (Means Transportation expresses the means of conveyance or travel from one place to another by Extension Workers is also classified as those who use Mobility (mobile) and those who trend on tracking (non-Mobile)).

2.2 Knowledge Management

For a dichotomous response variable, was set up a similar linear model to predict individuals' category memberships if numerical values are used to represent the two categories. Arbitrary values of 1 and 0 are chosen for mathematical convenience. Using the first example, to assign Y = 1 if KM is be effective and Y = 0 if KM is not effective or to assign X = 1 if respondent is male and X = 0 if respondent is female.

2.3 Definition and Measurement of Dependent Variable

The dependent variable in the study is the Knowledge Management (KM). While independent variables, otherwise called explanatory variables are assumed to have influence on extension workers' effectiveness in use of Knowledge Management in agricultural Extension Services delivery. The socioeconomic variables in the

study are; Sex, Marital Status, Age, Education, Household size (Number of persons in the house), Experience, Location, and Means of Transportation The independent variables such as age and level of education were measured by using the measuring units of year and, year of schooling. Service experience was determined by the duration of experience of a respondent in agriculture extension service.

3. Results and Discussions

3.1 Socio-economic Characteristics of Extension Workers

The socio-economic Characteristics of Extension Workers considered for this study include; sex, marital status, age, education, household size, experience in extension work, rank in extension service, location of duty of extension worker and means of transportation in extension service delivery as presented in Table 3.1 and 3.2.

3.1.1 Sex of Extension Workers

Sex is either of the two major forms of individuals that occur in many species and that is distinguished respectively as female or male especially on the basis of their reproductive organs and structures. Sex was introduced in the variables to determine which gender, male or female took much part in effectiveness of knowledge management among Extension Workers. Therefore, the results in Table 3.1 indicate that majority (74.5%) of the extension workers were male. This implies that men dominated bulk of extension work in the study area, this support the assertion of Odebode that, the widespread assumption that women are not fully involve in making key farm management [14]. The low percentage (25.5%) of women in extension service delivery justified the need for mainstreaming of Women-in-Agriculture unit from the existing ADPs in 1989 in order to extend extensionists" services to women. The Women –in –Agriculture unit of the ADPs were established in recognition of women's contribution to agriculture especially in the study area where culture and religion restrict male extension agent to contact the female farmer. This was as a result of a study sponsored by the United Nations Development Programme (UNDP) in 1987, which revealed that agricultural extension services had not targeted women as important clienteles in spite of the indispensable role played by women in agriculture.[14]

3.1.2 Marital Status

In Table 3.1, the results revealed that majority (79.8%) of extension workers were married while only 16.5% were single. This underscores the importance of marriage in the culture and tradition of people in the area of study which gives more respect and acceptance to marriage people among extension worker in the communities which is in accordance with the dictate of their culture. According Al-Islam.org, various studies prove that married people remain healthier, physically and mentally adequate which is needed for extension work [15].

3.1.3 Age

Age has been defined as the length of an existence extending from the beginning to any given time.[16] Results in Table 2 indicated that 35.1% of the extension workers were within the age range of 31 – 40 years, while 3.2% were within the range of 10 – 20 years with the lowest. The mean age value of extension workers was 35.4 years which implies that they were in active age than the old age of 50 years and above (21.8%). The finding also explains the need for Sokoto Agricultural Development Project to employ more youth in extension service delivery in the few years to come as almost 49.5% of work force will be due for retirement after attaining the age of retirement at 60 years. Therefore, as the old workers leave, they leave with their knowledge if not captured.

Table 3.1: Socio-economic Characteristics of Extension Workers (n = 188)

Variables	Frequency	Percentage
Sex		
Male	140	74.5
Female	48	25.5
Marital Status		
Married	150	80
Single	31	16.5
Divorce	3	1.5
Widow	4	2
Age (Years)		
10 – 20	6	3.2
21 – 30	23	12.2
31 - 40	66	35.1
41 – 50	53	28.2
51 and above	40	21.3
Mean	34.3 years	
Education		
Tertiary Education	149	79.3
Secondary Education	28	14.9
Primary Education	4	2.1
Non formal	7	3.7
Household size (No. of person in the family)		
0 – 5	48	
6 – 10	69	
11 – 15	34	
16 – 20	37	
21 and above	0	
Mean	12.9	

3.1.4 Education Level of Extension Workers

Education is the process of facilitating learning, or the acquisition of knowledge, skills, values, beliefs, and habits. Formal education is commonly divided formally into such stages as preschool or kindergarten, primary

school, secondary school and then college and university. [17] Therefore, the result of the study revealed that majority (79.3%) of the extension workers had attained the level of tertiary education ranging from National Diploma to Post Graduate level, while 14.5% were secondary level, few 1,1% of the Extension workers were Primary School levels and 3.7% attained informal education (Table 3.1). The result depicts that extension services in Sokoto State are dominated by extension workers with tertiary education. This presumes that effectiveness of knowledge management in Agricultural Extension approach can be achieved in innovation delivery in the areas of knowledge capturing, organization, analyzing, storing and sharing. This is in line with the work of Abubakar, contend that it is probable because education expands individual's scope of inferences, paradigm and ability access and process agriculture information in improving farming activities.[18] They further expressed that it also widening the scope of social interaction which thereby promotes innovation. This is because Knowledge Management is about interaction and sharing of knowledge among community of practice (CoP) [19].

3.1.5 Household Size

Household consists of one or more people who live in the same dwelling and also share meals.[20] It also may consist of a single family or some other grouping of people. Household is one of fundamental norms in Hausa/Fulani socio-economic, cultural and religious affiliation. According to Islamic tradition, large family is more appreciably than small family size. In the study, the result revealed that majority (69%) of the respondents had household size range from 5-10 people. Table 3.1 shows that 41% of the extension workers had household size of less than 5 people while 34% of the respondents had 11- 15 person. And mean of the household size of 13 people. The findings implies that the majority of the extension workers had small family size which characterized average family of civil servant, and some with large family 37% ranging between 16 and 20 persons.

3.1.6 Experiences in Extension Work

The common saying goes that experience is the best teacher. Thus, experience is the knowledge or mastery of an event or subject gained through exposure to it. The result in Table 3.2 shows that a good number (35%) of Extension Workers had experience between 21-30 years of contributing to extension delivery in the area of study, followed by those with 11 - 20 years of experience (29%). The result also indicates that 18% had working experience of between 1 – 10 years. The least was 16% with 31years and above of experience and the mean of working experience was 17.2 years. From the above backdrop, the Extension Workers could be classified as experienced workers which can foster effectiveness of knowledge management. The implication of the result indicated that in few years to come, almost 70% of extension workers in the area of study might have left the service. Therefore, knowledge capturing, storing and sharing should be intensified in order to transfer tacit knowledge to explicit knowledge for use of young ones.

3.1.7 Means of Transportation

Means of Transportation expresses the means of conveyance or travel from one place to another by Extension Workers. Means of transportation was introduced to determine the types of transportation commonly used by the Extension Workers in extension service delivery. Table 3.2 further indicates that (41%) of the extension workers used motor cycles as mean of transportation in the process of extension activities, while 13.5% motor cycle to carry out their duty. Few (2.7%) among the extension workers used office Vehicle. This implies that the need for effective knowledge management to easy and faster information sharing among Community of Practice is very significant and imperative.

Table 3.2: Socio-economic Factors of Extension Workers (n = 188)

Variables	Frequency	Percentages
Working Experience (Yrs.)		
1 – 10	34	18
11 – 20	55	29
21 – 30	66	35
31 and above	30	16
Not specified	3	2
Mean	17.2years	
Means of Transportation		
Foot/Trekking	25	13.3
Motor Cycle	77	41
Private	36	19.1
Commercial Vehicle	38	20.2
Official Vehicle	5	2.7
Not specified	7	3.7

Source: Field Survey 2018

3.2 Effects of Extension Workers Socio-economic Characteristics on their level of KM in Extension Service Delivery

Table 3.3 presented the logistic regression analysis computed from SPSS in order to explore the relationship between the independent variables; Sex, Marital Status, Age, Education level, Household size, Working Experience, Cosmopoliteness, Rank of Extension Workers, and Mean of Transportation and the Dependent variable KM. The result shows that education, household, working experience and cosmopoliteness and Means of Transportation are significant and positive related to use of KM, while Marital Status and Rank of Extension Officer are significant but negatively related. And Six and Age of Extension Worker are insignificant to the

effective use of Knowledge Management in Agricultural Extension approach.

3.2.1 Sex of Extension Workers

Sex of Extension Workers was taken into consideration for assumptions that sex could be determining factor in the use of Knowledge Management Agricultural Extension Service Delivery. Contrary to this expectation, the result of the analysis indicated that sex of the Extension Workers was statically insignificant but positively related with effectiveness of Knowledge Management (P>0.998) (Table 3.3). The positive sign signified that Male Extension Workers were effective in extension delivery due to understanding of Knowledge Management compared to their Female counterpart.

3.2.2 Marital Status of the Extension Workers

Table 3.3 revealed that Marital Status is highly significant but negatively related (P>0.010) with effectiveness of knowledge management in extension approach. This implies that unmarried Extension Workers turn to be effective in Knowledge Management in Agricultural Extension approach than the married Extension Workers. It implies that the more social and job responsibilities of married extension workers positively contributed to their effectiveness on knowledge management.

3.2.3 Age of Extension Workers

The result indicated an insignificant effect of age on Knowledge Management (P>0.295) but positively related. This implies that age does not influence effectiveness of Knowledge Management in Agricultural Extension approach in the study area.

3.2.4 Education

Table 4 Revealed that educational level was significant (p>0.075) and positively related with effectiveness of Knowledge Management in Agricultural Extension approach. This implies that the educational qualification of the Extension Worker: has influence on effectiveness of knowledge management. The more education levels the more the chances of effectiveness in Knowledge Management. This is corroborated by the report of Mtega *et al*., [20] who expressed that the higher the education level of the people the more the potential they have for developing new innovations and technologies needed for transforming the agricultural sector and rural livelihoods.

3.2.5 Household

Number of persons in the family or household size was also included as an explanatory variable on the assumption that the size of the family or family responsibility will inversely affect the effectiveness of Knowledge Management in Agricultural Extension Service delivery but Contrary to this expectation, the result indicated significant effect of household size on effectiveness of Knowledge Management (P>0.001) but negatively related. The result implies that more family responsibilities or high number of family size does not influence the effectiveness of Knowledge Management in Agricultural Extension Service Delivery.

3.2.6 Experience of Extension Workers

Experience was taken into consideration for assumptions that the more experienced the Extension Workers, the more favorably disposed to agricultural information knowledge. Table 3.3 revealed that experience was also significant (P>0.025) and positively related with effectiveness of Knowledge Management Agricultural Extension approach. This implies that the more experienced the Extension Worker the more informed about new technology and agricultural knowledge than their colleagues who had no much experience. This is in line with Mtega *et al.,* [20] who submitted that those people who have been involved in either creation of new agricultural knowledge and innovations or communication of created knowledge for some years are informed than those who has less years in service. It equally implies that those who have worked for more years are more likely to have developed some networks they have been using in creating and communicating knowledge over the years

3.2.7 Cosmopoliteness

Table 3.3 result indicated cosmopoliteness has a significant (P>0.084) effect and positively related to effectiveness of Knowledge Management among Agricultural Extension Workers. This implies that the more Extension Workers is cosmopolitan the greater likelihood of his/her effectiveness in Knowledge Management. This shows that Extension Workers who are cosmopolite frequently come to contact with new people, new things and new ideas than their counterpart in the rural areas. The finding collaborated with the reported of Muhammad, positive and significant relationship between perception of extension agent on sustainable agricultural practice in Rajshahi district of Bangladesh and Cosmopoliteness and stated that Cosmopoliteness thus can change the mental makeup of the people and make them more receptive for new ideas. Knowledge increases one's awareness, mental alertness, makes one familiar with facts, objects, concepts or practice [21]. Similarly, Abubakar [17] reported on socio-economic and psychological factors influencing adaptation of improved Gum Arabic production technologies by Farmers in Gombe State Nigeria and stated that a person with high network and link the with outsider World have greater access to production information which could positively influence their adoption decision [18].

3.2.8 Means of Transportation of Extension Workers

Means of transportation was taken into consideration for reason that the more convenient the means of

transportation of Extension Workers, the more they are disposed to effective Knowledge Management in Agricultural Extension approaches. The result obtained in Table 3.3 shows that the effect of means of transportation was significant (0.054) and positively related. This implies that more convenience means of transportation for Extension Workers the effectiveness of the Knowledge Management among Agricultural Extension Workers.

Table 3.3: Effects of Extension Workers Socio-economic Characteristics on their level of use of KM in Extension Service Delivery

Dependent Variable	Independent Variables	Co-efficient of Correlation	Prob. P>|z|	Variable	
Effectiveness of knowledge management among agricultural extension workers in extension service delivery	Sex	0.00NS	10%	5%	1%
	Marital Status	-1.503**			
	Age	0.205NS			
	Education	0.521***			
	No. of children	0.694*	5-9.9	1-4.5	<1
	Experience	0.325***			
	Rank of ext. work	-0.126***			
	Location	0.285***			
	Means of Transp.	0.295***			

* Significant at 0.05 level of probability, ** Significant at 0.01 level of probability, *** Significant at 0.00 level of probability, NS = no significant

4. Conclusions and Recommendations

The study was basically conducted with the broad objective of assessing the effectiveness of Knowledge Management among Agricultural Extension Work in Sokoto State. The primary data used for the investigation were obtained through interview and structured questionnaire administered to two hundred (200) Extension Workers in Sokoto Agricultural Development Project (SADP) and one hundred and eighty-eight (188) were returned and used for analyses. This was purposively selected to form the sampling frame which includes description statistics, inferential statistics, The findings revealed that majority 74.5% of the extension workers were male, majority of 79.8% were married and 35% were within the age range of 31-40 years. Generally, the Extension Workers were literate and had attained one educational level or the other, while 36.7% had a household size of 5-10 persons in the family. The majority of the Extension Workers had 21-25 years of working experience in extension services. The bulk of the extension workers (47.3%) were Village Extension Workers (VEW) and majority (41%) uses Motor Cycle for transportation. It is essential to note that result of the effects of extension workers socio-economic characteristics on their level of use of KM in extension service delivery was consistent as the socioeconomic characteristic are significant and positively related to effectiveness of knowledge management in agricultural extension service delivery

Knowledge Management plays an important role in agricultural extension services delivery in Sokoto State due imperative nature of its people's occupation. The study has explored Knowledge Management in agricultural extension services. Based on the result of the study the following recommendations on how to improve, implement an effective use of knowledge management in agricultural extension services delivery in Sokoto State are made:

Knowledge Management should be given top management support in all government establishments which include; Federal, State, and Local Government Areas.as well as Organizations and all Agricultural Extension community of practice (AECoP). This will go in line with strengthening and improving on the capacity should be given to training and re-training of Extension Workers in Knowledge Management and Information Technology.

Trainings should be conducted regularly by top extension officers to junior officers on effective extension service delivery and knowledge management to boost the capacity building of field staff and other officers in the office for appropriate and quality extension delivery in the state. This will aid in providing agriculture extension workers with the knowledge and skills required on appropriate information techniques and computer building of extension workers and more emphasis software for improved agricultural extension service delivery.

Reference

1. National Institute of Agricultural Extension Management (NIAEM). *An Organization of Ministry of Agriculture, Government of India Rajendran agar, Hyderabad*. Available from: www.manage.gov.in [Accessed 31st May 2017]
2. Ogunsumi LO, Abegunde BO. Evaluation of agricultural extension and delivery services in southwest Nigeria. *International Journal of*

Agricultural Science. 2011;1(4): 581-591. Available from: www.inacj.com

3. James P. Strategic Management Meets Knowledge Management: A Literature Review and Theoretical Framework. In: *5th KM Conference 2004*. Australia and Canberra: 2004.
4. Rai RK. Knowledge management and organizational culture: A Theoretical integrative framework. *Journal of knowledge management.* 2011; 15(5): 779-801.
5. Alavi M, Leidner DE. Review: Knowledge Management and Knowledge Management Systems: Conceptual Foundations and Research Issues. *MIS Quarterly*. 2001; 107-136.
6. Tan LP, Wong KY. Linkage Between Knowledge Management and Manufacturing Performance: A Structural Equation Modeling Approach. *Journal of knowledge management*. 2011; 19(4): 814-835.
7. Mahmoudsalehi M, Moradkhannejad R, Safari K. How knowledge Management is Affected by Organizational Structure. *The Learning Organization*. 2011; 19(6): 518-528.
8. Davenport TH, Prusak L. *Working Knowledge: How Organizations Manage What They Know*. Boston: Harvard Business School Press; 2000.
9. Vanclay F. The Impasse Between Scientists and Producers. CRC for Premium Quality Wool Technology Adoption Symposium Workshop 1999, Wool House, Victoria, CRC for Premium Quality Wool. Web Dictionary (2019), Household meaning and size. Retrived on 21 February, 2019.
10. Amabel F, David F, Tim T, Peter B, Scott C, Jane W, David H. *Agricultural Extension, Learning and Change. Rural Industries Research and Development Corporation.* Report number: 03/032, 2003.
11. Murari S, Ramjee G., (2015). *How Competent Are Agricultural Extension Agents and Extension Educators in Nepal.* USAID/BFS/ARP-Funded Project. Report number: AID-OAA-L-12-00002. Cited in Cochran *et al.,* 2012; Gibson and Brown, 2003; Maguire, 2012; Melak and Negatu, 2012; Rivera *et al.,* 2009; Swanson and Rajalahti, 2010
12. Maddy DJ, Niemann K, Lindquist J, Bateman K. Core competencies for the cooperative extension system. Oregon State University Extension Service. 2002. Available from; https://www.msuextension.org/jobs/forms/Core_Competencies.pdf [22nd November 2014]
13. Odebode SO. *Gender Issues in Agricultural Extension and Rural Development in Nigeria. Rural Development – Contemporary Issues and Practices*. University of Ibadan, Nigeria. 2012. Available from: www.intechopen.com
14. Al-Islam. *Importance of Marriage in Islam, Ahlul Bayt Digital Islamic Library Project 1995-2019.* Available from: https://www.al-islam.org/islamic-marriage- handbook-syed-athar-husayn-sh-rizvi/importance-marriage-islam
15. Merriam-webster. Definition of Marital Status, Age, and Sex. Available from: https://www.merriam-webster.com/dictionary/sex. [28th June 2019].
16. Google Dictionary. Education Meaning. Available from: https://www.google.com/search?client=operaandq=education+meaningandsource_id=operaandie=UTF-8andoe=UTF-8 [Accessed 14th January 2019]
17. Abubakar M. Socio Economic and Psychological factors influencing adaption of improved Gum Arabic production technologies by Farmers in Gombe State, Nigeria. [Dissertation]. Department of Agricultural Extension Rural Development, Usmanu Danfodioyo University Sokoto, Nigeria; 2017.
18. K4Health. Knowledge management in global health programme. 2015. online publication. Retrieved on 21th January 2018.
19. Web Dictionary. Household Meaning and Size [Accessed on 21st February, 2019].
20. Mtega WP, Dulle FW, Malekani AW, Chailla AM. Awareness and use of Web 2.0 Technologies Sharing of Agricultural Knowledge in Tanzania. *Knowledge Management and E-Learning*. 2014; 6(2):188–202
21. Muhammad R. Islam, Mostafizur M.U. Rahman, Ahmad K.M. Pervez,Muhammad H.K. Kamaly, (2013) perception of extension agents about sustainable agricultural, Department of Agronomy and Agricultural Extension, University of Rajshahi, Rajshahi, Bangladesh. Upazilla Agriculture Office, Tanore, Rajshahi, Bangladesh.