



## TECHNOLOGY TRAINING NEEDS OF WOMEN FARMERS FOR ENHANCING VALUE CHANGE IN MARKETING OF FARM PRODUCTS IN ENUGU STATE, NIGERIA

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### Abstract:

Women farmers in agrarian communities of Enugu State could not market their farm products profitably because they could not involve electronic technology. Whatever they produced are sold to consumer intermediaries at the farm gate. Some are sold to open market in small bites at low cost hence they remain poor. This poverty lingers on because those women farmers could not involve technologies in the sale of their products beyond their communities and among competing producers been exploited by middlemen. If technology is involved in the marketing of their products their goods will extend inform of exports to other states and beyond with higher value claim; but to obtain the change in their profits margin they require training in the use of technology in marketing their farm products. This study, therefore, focused on the identification of technology training needs of women farmers in the use of cell phone, computer, and internet for enhancing profit for marketing their farm products. Four research questions guided the study while four hypotheses were formulated and tested at 0.05 level of significance. The study adopted action group design supported by the function of the industry model. The population of the study was 80 composed of 33 high tech (electronic) bankers, 14 Lecturers of Business Education and 33 Lecturers of Computer Science. Cluster sampling was involved in selecting Uzo-Uwani, Igbo Etitu and Nsukka Local Government Areas for the study in Nsukka Agricultural Zone of Enugu State while purposive sampling

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technique was used to select the respondents with certain criteria involving those that are relevant to the study among the population. The instrument for data collection was structured questionnaire developed from the literature and function of the industry. Three experts validated the instrument: one from the Department of Computer Science, one from the bank and another one from the Department of Measurement and Evaluation competent in instrument development or assessment while Cronbach alpha reliability method was used to ascertain the internal consistency of the questionnaire items and coefficient of 0.82 was obtained. Weighted mean was used to answer the research questions; standard deviation was used to determine the spread of the respondents from the mean and one another in their responses; analysis of variance (ANOVA) was used to test the hypothesis of no significant difference at 0.05 level of significance. The study found out that 16 items on the essential basic knowledge, 22 items on the computer/electronic operation, 17 items on the e-marketing and 21 items on the training procedure were found needed for training the women farmers. The study found out that there was no significant difference in the mean ratings of essential basic knowledge, computer operation, e-marketing and training procedure of the three groups of the respondents on the items. It is therefore recommended that the identified items in essential knowledge and skills, mobile phone operation, e-marketing (advertising, bargaining and supply), and training procedures should be involved in training the women farmers in the marketing of farm products for higher value claim while the trainers should use the identified procedures with the support facilities from affected Local Governments for the same purpose.

**JEL:** M30; M31; Q12; Q13

**Keywords:** technology, training needs, women farmers, value change, marketing, farm product

## 1. Introduction

Farm products produced by farmers are incomplete until they are bought by individuals and industrial consumers in the market. Market is a point where buyers and sellers meet to strike bargain for goods and services. The communication and exchange of goods between the buyers and the sellers is marketing. In offering goods to market many crucial activities are involved which is regarded as a marketing. Marketing, according to American Marketing Association in Kotler, Armstrong, Wong and Saunders (2008), is the activity, set of institution, delivering, and exchanging offerings that have value for customers, clients, partners, and society at large. Marketing is defined by Longe (2011) as the performance of business activities that direct the movement of goods and services from the producers to the consumers or users in order to satisfy customers' needs. In this study, marketing encompasses all the activities involved in the conveyance of food items from the distributors (women farmers) to the individual consumer or organizations. The

activities including: advertising, communication, ordering, transportation and payment among others. For the fast conveyance of information on farm products, the only means women farmers can use to reach individuals and institutional buyers across the globe is through digital technologies.

A farmer, according to Olaitan in Omeji (2013), is a person who grows crops or animals for the benefit of mankind. The farmer can be a man or a woman. Women farmers, as viewed by Olaitan, Ifeanyieze and Alaribe (2010) are females that engage in agricultural production and marketing of farm products. In the context of this study, women farmers are individual females that participate in the marketing of farm products. The women farmers' roles in commercialization of agricultural products in Enugu State is highly significant and cannot be compromised or ignored. Majority of activities involve in the exchange of food crops like cassava, vegetables, maize, palm oil, fruits, melon and cocoyam among the rest in the area of study are carried out by women farmers. Todaro and Smith (2009) in Shafiwu, Salakpi and Bonye (2013) stated that women are responsible for the transporting and marketing of the farm produce. Agu (2013) stated that Nigeria women farmers consists 60 – 80 percent of labour in agriculture starting from processing and marketing of food which make them contribute to the food supply.

Despite all the above roles performing by women farmers in the Enugu State; they remain poor because they cannot integrate technology in the selling of farm products in the global market. Saito and Weideman (1990) neither emphasized that women neither have less access nor trained to work more effectively with information and communication technology for effective marketing. Although most of the women in the area of study are educated up to junior secondary school level, they lack the basic digital literacy that will make them to use the electronic devices for marketing their farm products. As asserted by Agu (2013), the main problem of Nigeria women is none integration of ICT for business opportunities as they are not mobile, unlike the men, because they are house-bound. Another challenge is the language barrier which Page (2002) supported that English is currently the global lingua franca. The author further stated that 80 per cent of all websites provide content in English alone.

The lack of understanding the role of technology like cell phone and computer play in marketing of farm products by women farmers restrict them to selling their products to middlemen who always obtain farm products from these women farmers at close market, at cheaper rates. These middlemen in return usually sell at exorbitant rates to customers and become richer than the women farmers. Hence, the women farmers lack sufficient income to cater for their children education, health care and even highly nutrition food, remain in bad shelter, wearing warned out clothes despite their labour supplied. The middlemen, according to Badar and Mustafa (2008), are individuals or institutions who specialize in performing various marketing functions involved in the purchase and sale of goods. As discussed by Oguoma, Nkwocha and Ibeawuchi (2010), middlemen buy up farm products at farm gate at almost give away price and sell at higher price to consumers by taking the real profit; hence, these middlemen seem to be a threat to food supply and security in the environment.

If the women farmers are exposed or trained in how to use the digital technologies like cell phones, computers and skills for selling farm products, it may create a change in the mega value of the marketing of their products through e-marketing. Ragasa (2012) noted that technologies are practices or techniques, tools or equipment, know-how and skills in traditional ways, or combinations of the aforementioned components. Pearson (2009) had seen technology as new machines, equipment and way of doing things that are based on modern knowledge about science and computer for selling online. E-marketing, as defined by Eszes (2010) is the use of internet and related digital technologies to achieve marketing objectives and support the modern marketing concept. E-marketing, according to Tsekouropoulos, Andreopoulou, Koliouka, Lefa, Koutroumanidis, and Batzios (2013), encompasses all the business activities conducted via the net with the aim of attracting new business, retaining current business and developing its brand identity. With reference to this study, e-marketing is the sale of agricultural products via the digital world with the help of machines like mobile phones, computers and other technologies by women farmers. E-marketing as opined by Petrovic (2010) is a subset of e-Business that utilizes electronic medium to perform marketing activities and achieve desired marketing objectives for an organization. The utilization of e-marketing facilities will promote the rate of turnover and reduce expenses of women farmers. This technology will bring about more value above manual marketing; it will also reduce the effects of middlemen. By selling farm products online, according to U. S. Bureau of International Information Programme (2008), a neighbourhood shop or home-based firm can reach a national or even international group of potential customers.

According to Kramer, Jenkins, and Katz (2009) ITC Ltd in India supplies computers and connectivity to village-elected farmers who access market prices locally and around the globe in order to help farmers actualize best price available; also are the selling of seeds, tools, fertilizer and other products. Agu (2013) stated that with e-mailing and cell phoning female farmers can sell their farm products without the middlemen. Lee, Mendelson, Rammohan and Srivastava (2017) noted that online marketplaces such as La Ruche Qui Dit Oui in France help shoppers buy products within a 150-mile radius, and pick them up from a local distribution point, called a "hive" hence; this allows farmers to bypass middlemen. In this study, if women farmers are exposed to training in the use of e-marketing of farm products they may be able to perform effectively. They may increase value change of their farm product like similar farmers in India and France respectively.

Training, in the opinion of Masadeh (2012), is a planned process to modify attitude, knowledge or skill behaviour through a learning experience to achieve effective performance in any activity or range of activities. Training in the view of Page in Kulkarni (2013) is a systematic development of the knowledge, skills and attitudes needed by an individual to perform adequately a given task or job. With reference to this study, training is the planned methods or strategies for empowering women farmers with essential basic knowledge and skills in e-marketing for proficiency in transacting farm

products with essential language requirement, operation and the utilization of computer and other electronic devices for marketing. The goal of this training can be achieved through teaching the women farmers the essential knowledge and operational skills in e-marketing.

This training should be anchored on the identification of knowledge, and skills needed in e-marketing and the various methods and techniques involved in teaching or making individuals to learn the competencies in relevant technology devices. In educating women farmers in remote rural areas similar to the area of study, Gasperini and Acker (2009), in a study on education for rural people: the role of education stated that basic literacy and numeracy may be the first step. Ehmke, Ernst, Hopkins, and Tweeten (2001) carried out a study on the market for e-commerce services in Agriculture in Ohio, USA where it was found out that farmers sold products through electronic commerce such as: feed, seed, grain, crop services, consulting, crop inputs, machinery, and breeding stock and used technology to interact with suppliers through: telephone, fax, us mail, e-mail, world wide web site. The authors further conclude that nearly all Ohio agribusinesses agreed that the Internet was important and would be a part of business plans in the future. Allison (2010) submitted that: understanding figures in head by fair accuracy, profit and loss, related aspect of business and technology skills by knowing more about website, track goods online and using client database or customer relationship management online are required for successful business. Of great importance to this study is the training package developed by Collier (2011) in Newfoundland and Labrador Laubach Literacy Council Inc. where essential basic skills and knowledge were identified as: computer basics, using the computer various parts, creating and printing a basic document, the use of internet, communicating online, electronic banking and bank at ATM are necessary for the success of farmers in e-marketing. The education requirements in agriculture vary at each level.

In ICT application by women farmers, Agu (2013) carried out a study on the application of ICT in Agricultural Sector: Women Perspective where author submitted that women farmers needed minimum basic education which enable them to read and write; to have access to ICT for expansion of local market, that proper training of rural female farmers in effective usage of ICTs can empower them to function globally, improve their chance of networking in agri-food business endeavours, and rural female farmers can access information in market using ICTs such as e-mail, the world wide web, electronic networks, teleconferencing, distance learning tools and wireless mobile phone. In this, Koko and Koelane (2013) carried out a study on Reflecting on Information and Communication Technology (ICT) in marketing from a marketer's and student perspective in Bloemfontein, South Africa where it was found out that computer literacy is imperative for accessing the various other forms of ICT; that the respondents' knowledge of the various forms of traditional and E-marketing methods regarded telephones (land lines and/or mobile phones) as the most effective method of marketing. This is followed by newspapers, Facebook, television, e-mail and short message services (SMS). In mobile phone operation skills, Bakare (2017) carried out a study on

management skills required by farmers in making cell phones effective for boosting agricultural production in Ekiti State, Nigeria where it was found out that farmers need operational skills in: locate power switch on the cell phone, power on the cell phone, scroll to locate phone book on the cell phone, scroll down or up to select the numbers or name to be dialed, key in first alphabets of the name of the person to be called and 27 others. Lee, Mendelson, Rammohan and Srivastava (2017) carried out a study on Technology in Agribusiness: Opportunities to Drive Value Chain in USA where it was found out that technology has helped grow agricultural marketplaces from merely physical places to physical and digital markets where numbers of online services that provide farmers access to insurance (e.g., Insurance Marketplace) and financing (e.g., Produce Pay, which offers cash flow to farmers the day after they ship product).

In training, Abdul Halim and Ali (1999) carried out a study on Training and professional development of Agricultural Extension Workers in Baghladesh where it was found out that the most important part in a training programme after a need for training has been identified is the curriculum. The curriculum specifies what will be taught, how it will be taught and evaluation. In another study, Muhammed (2016) carried out a study on development of resource management programme in Sorghum production enterprises for training secondary school graduates for employment in Kwara and Kogi States, Nigeria, where it was found out those graduates required training in: ...marketing of sorghum grain, sorghum flour and material resource for effective sorghum marketing enterprise. This training of Senior Secondary School Graduates, the study stated must include knowledge, and skills in Sorghum growing, processing and marketing (curriculum); resource input and their uses, methods of training which include demonstration and supervision; evaluation which include observation, rating and knowledge of the result. Other related literature reviewed are: Page 2002, Jone and Payne (2008), Yadav, Sood, Thakur and Choudhary (2013), Al-Zahrani<sup>1</sup>, Aldosari<sup>1</sup>, Baig, Shalaby, and Straquadine (2017) were studied to obtain ideas about the types of knowledge, skills and attitudes that are needed for training needs of women farmers. These form an important framework for training needs of women farmers. The purpose of this study therefore is the identification of training needs of women farmers in enhancing value change in marketing of farm products in Enugu State. Specifically, the study sought to identify:

- 1) essential basic numeracy and language knowledge and skills in technology (cell phone/ computer);
- 2) mobile phone operation skills;
- 3) e-marketing (advertisement, bargaining and supply) skills;
- 4) training procedure to be adopted by trainers for the training of women farmers for sustainable profit from farm products.

## 2. Methodology

Four research questions guided the study. The study adopted action group design, supported by the function of the industry model. Action group design as explained by Cohen, Mannion, and Marrison (2011) is a process in which practitioners study problems scientifically so that they can evaluate, improve and steer decision-making and practices. This design is suitable for this study because it involved the action of small groups of professionals such as: hi-tech (electronic) bankers in Marketing Units of Commercial Bank, Lecturers Science Computer and Business Educator in identify the essential basic knowledge in numeracy and language in technology (cell phone /computer), mobile phone operation skills, e-marketing skills and procedure for training women farmers in Enugu State through the questionnaire developed as instrument for data collection. Function of the industry as described by Olaitan, Asogwa, and Abu (2013) is a model that provides the limitations that help to provide shortfall of a programme in meeting the requirement of the same programme through emergency of new technology into the industry. The model helps the identification of skills or function of the industry that could be integrated into existing school curriculum in order to enable the training programme respond effectively to the needs of the industry. It can be used to train relevant individual for employment in a particular occupation or industry. This model is relevant to this study because it serves as a source of identification of essential basic skills in cell phone /computer, e-marketing from bankers who are familiar using the electronic for transaction.

The study was carried out in Enugu State, Nigeria. The State consist 17 Local Government Areas (LGAs) with many women farmers and variety of commercial banks. The population for the study was all the e-bankers in (marketing units), Computer Science Lecturers and Business Educators in the Tertiary Institutions in the 17 LGAs in Enugu State. The sample for the study was 80 from 3 Local Government Areas (LGAs) obtained through cluster and stage sampling techniques which resulted into the following: (a) 33 hi-tech (electronic) bankers from; 3 bank officials each from 11 various commercial bank branches in 3 LGAs, (b) 33 Computer Science Lecturers and 14 Business Educators all from Nsukka, Igbo-Etiti and Uzo-Uwani Local Government Areas. Purposive sampling techniques were used to select the 33 Bankers, 33 Computer Science Lecturers, and 14 Business Educators through the following criteria: banking efficiency, the Bankers must be e-bankers in marketing units of commercial banks; Computer Science Lecturers must be lecturers from tertiary institutions and in education, the lecturers must be Business Educators who had studied e-commerce.

The instrument used for data collection was questionnaire developed from the literature and function of the industry. The questionnaire items had a four-point response scale options of highly needed, averagely needed, slightly needed and not needed. Three experts validated the instrument; they were one each from First Bank of Nigeria Plc Awka, one from Department of Business Education, Nnamdi Azikiwe University Awka, Anambra State, Nigeria and programme evaluator from Measurement and Evaluation

Department, Nnamid Azikiwe University, Awka, Nigeria. Their corrections and suggestions were used to produce the final copies of the questionnaires. Cronbach Alpha method was used to determine the internal consistency of the instrument through the administration of 10 copies of questionnaire on: 4 from Banks, 3 from Computer Science Lecturers and 2 Business Educators from Tertiary Institutions in Kogi State, Nigeria; the analysis of the data yielded an alpha coefficient of 0.86.

Three research assistants familiar with the environment where data is collected were hired to administer 80 questionnaires on the respondents. Seventy three copies of questionnaire were retrieved and analyzed using weighted mean to answer the research question based on real limit of: highly needed: 4.00 – 3.50, averagely needed: 3.49 - 2.50, slightly needed: 2.49 -1.50 and not needed: 1.49 – 1.00; any item with a value of 1.50 or above is regarded as needed by women farmers.

Standard deviation was used to determine the spread of the responded around the mean and from the opinion of one another. Any item with a standard deviation less than 1.96 (95% confident limit) shows that the respondents were not far from the mean or from the opinion of one another. Analysis of Variance (ANOVA) was used to test the null hypothesis of no significant difference at  $P \leq 0.05$  level of significant. Any item with a value of  $P \geq 0.05$  is accepted while the reverse is true for any item with a value of  $P < 0.05$  level of significant is rejected.

### 3. Results

**Research Question 1:** What is the essential basic numeracy and language knowledge in technology (cell phone/ computer) needed by women farmers for e-marketing of their farm products in Enugu State?

**Ho 1:** There is no significant difference in the mean ratings of the e-Bankers, Computer Base Lecturers and Business Educators on the essential basic numeracy and language knowledge in technology (cell phone/ computer) needed by women farmers for e-marketing of their farm products in Enugu State.

The data for answering the research question 1 above and testing of hypothesis 1 are presented in Table 1.



**Table 1:** Mean ratings and Analysis of Variance (ANOVA) of the three groups of the respondents on the essential basic numeracy and language in technology needed by women farmers for e-marketing of farm products in Enugu State (N=73)

S/N	Item Statement	$\bar{x}$	SD	TSS	MSS	F/Ratio	P/Val	E <sup>2</sup>	Rmk	Ho
<b>Numeracy</b>										
1	Recognize and count number: 0 1 2 3 4 4 5 6 7 8 9	3.51	0.57	23.84	0.59	2.72	0.07	0.98	HN	NS
2	Recognize even numbers such as: 2 4 6 8 10 12 14 16 18 ...100	3.27	0.65	30.52	0.29	0.35	0.71	0.99	AN	NS
3	Write figures on chalk board / notebooks: 0 – 9	3.23	0.66	31.04	0.64	2.05	0.14	0.97	AN	NS
4	Recognize the place value of Zero (0) to mean noting or none	3.16	0.67	31.81	0.28	0.24	0.79	0.99	AN	NS
5	Recognize Naira currency digits like #20, #50, #100 and #1000	3.25	0.66	31.56	0.75	2.57	0.08	0.98	AN	NS
6	Recognize and interpret basic arithmetic signs such as: +, -, ×, ÷ and =	3.17	0.58	24.68	0.98	1.93	0.15	0.96	AN	NS
7	Understand simple calculation using symbols/signs	3.25	0.66	31.56	0.75	2.57	0.08	0.98	AN	NS
8	Apply mathematics symbols like: 2×2, 2 +3,4 - 3, 6÷2	3.12	0.51	25.89	0.67	2.92	0.06	0.97	AN	NS
<b>B. Language</b>										
9	Recognize and read alphabets from A – Z	3.19	0.64	29.32	0.52	1.58	0.21	0.98	AN	NS
10	Learn text messages in their own language	3.23	0.54	21.04	0.25	0.71	0.41	0.99	AN	NS
11	Master simple Pidgin English where necessary	3.32	0.62	27.75	0.67	2.62	0.08	0.96	AN	NS
12	Learn how to hold the cell Phone on the palm without making error with other fingers	3.25	0.57	23.56	0.19	0.13	0.88	0.99	AN	NS
13	Recognize charge/ no charge in the cell phone / computer	3.37	0.56	23.01	0.23	0.42	0.66	0.99	AN	NS
14	Understand different signal and their meaning on the cell phone e.g.: on / off the cell message Phone/system alert, sent message alert, expected message alert, sign of network, no recharge voucher	3.10	0.59	25.12	2.99	5.27	0.01	0.88	AN	S*
15	Learn how to put off the phone after using	3.18	0.58	24.05	2.20	8.40	0.00	0.89	AN	S*
16	Practice items 1-14 on mobile phone/computer towards e-marketing beginning, with general keyboarding	3.20	0.64	29.92	0.47	1.29	0.28	0.99	AN	NS

**Key:**  $\bar{x}$ =weighted mean; SD=Standard deviation; Mss=Mean sum of square; TSS= Total sum of squares; HN=Highly needed; AN=Averagely needed; SN=Slightly needed and NN=Not needed.

The data in Table 1 reveals as follows: the mean values of items 1-16 ranged from 3.12 – 3.20 and each is greater than the real limit of 1.50. This indicates that the respondents rated the items as needed by women farmers for e-marketing of their farm products in Enugu State. The standard deviation of the sixteen items ranged from 0.51 – 0.64 and each is less than 1.96 (95% confidence limit). This indicates that the respondents were not far from the means or from one another in their responses. The P-values of the fourteen out of sixteen items ranged from 0.06 – 0.88 and each is greater than 0.05. This indicates that there is no significant difference in the mean ratings of the three groups of respondents on essential language and language in technology training needed by women farmers on their e-marketing of farm products in Enugu State. The P-value of item (14-15) from 0.00-0.01 these are less than 0.05 indicating that there is a significant difference in the mean ratings of the three groups of respondents on these two items. The E<sup>2</sup> (correlation Ratio) from 0.88-0.99 indicates that the relationships among the respondents is high; that is, the respondents are very close in their judgments on each item.

**Research Question 2:** What are the mobile phone operation training needs of women farmers for e-marketing of farm products in Enugu State?

**Ho 2:** There is no significant difference in the mean ratings of the e-Bankers, Computer Base Lecturers, and Business Educators on the mobile phone operation training needs of women farmers for e-marketing of farm products in Enugu State.

The data for answering the research question 2 and testing of hypothesis is presented in Table 2.

The data in Table 2 reveals as follows: the mean values of items 1-22 ranged from 3.12 – 3.52 and each is greater real limit of 1.50. This indicates that each item is needed by women farmers for e-marketing of their farm products in Enugu State. The standard deviation of the twenty-two items ranged from 0.53 – 0.71 and were less than 1.96 (95% confidence limit); this indicates that the respondents were not far from the means or from one another in their responses. The P-values of the 19 out of 22 items ranged from 0.09 – 0.77 and each is greater than 0.05. This indicates that there is no significant difference in the mean ratings of the three groups of the respondents on the nineteen out of twenty two items as mobile phone operation training needed by women farmers for e-marketing of farm products in Enugu State. The P-value of items (3, 4, 12, 15 and 16) ranged between 0.02 – 0.04 and each is less than 0.05; this indicates that there is significant differences in the mean ratings of the three groups of respondents of the 4 items. The E<sup>2</sup> (correlation Ratio) of the 22 items ranged from 0.87-0.99 indicates that the relationships among the respondents is high; that is, the respondents are very close in their judgments on each item.

**Table 2:** Mean ratings and Analysis of Variance (ANOVA) of the three groups of the respondents on the mobile phone operation training needed by women farmers for e-marketing of farm products in Enugu State (N=73)

S/N	Item Statement	$\bar{X}$	SD	TSS	MSS	F/Ratio	P/Val	E <sup>2</sup>	Rmk	Ho
1	Recognize the parts of cell phone and functions of each part	3.21	0.64	29.92	0.57	1.80	0.17	0.98	AN	NS
2	Recognize cell phone essential accessories and use them like: charger, case, earphone among the rest	3.12	0.62	27.89	1.03	4.91	0.10	0.96	AN	NS
3	Learn some essentials on cell phone operation from the manual such as: on, off, put the phone in silent and etc.	3.23	0.59	23.09	2.86	5.84	0.04	0.87	AN	S*
4	Locate power switch on the cell phone	3.30	0.57	23.37	2.79	4.27	0.02	0.88	AN	S*
5	Check credit/ recharge voucher balance	3.27	0.61	26.52	0.57	2.20	0.11	0.98	AN	NS
6	Obtain the recharge voucher from the Vendor	3.21	0.64	29.92	0.61	2.01	0.14	0.98	AN	NS
7	Key in appropriate mobile network PIN	3.22	0.56	22.49	0.47	2.10	0.13	0.98	AN	NS
8	Confirm the PIN before sending	3.27	0.53	20.52	0.31	1.21	0.30	0.98	AN	NS
9	Send the PIN and wait for the result	3.49	0.71	26.74	0.52	1.84	0.17	0.98	HN	NS
10	Collect phone numbers from the customers, save it to the cell Phone	3.52	0.68	26.96	0.58	1.92	0.73	0.98	HN	NS
11	Scroll to select the name of the receivers	3.30	0.64	29.37	0.48	1.39	0.26	0.98	AN	NS
12	Press the phone book for locating names	3.29	0.61	22.14	1.92	4.38	0.02	0.87	AN	S*
13	Key in the phone number of the customer incase the contact is not in the phone book	3.33	0.62	28.11	0.67	2.55	0.09	0.98	AN	NS
14	Press the call sending key/ button	3.21	0.64	20.74	0.19	0.27	0.77	0.99	AN	NS
15	Place the phone by the head side	3.12	0.62	20.12	2.76	3.49	0.04	0.86	AN	S*
16	Place the mouth piece close to the mouth	3.23	0.59	20.15	0.18	0.24	0.79	0.99	AN	NS
17	Let the speaker near the ear of the caller	3.30	0.57	35.48	0.39	0.57	0.57	0.99	AN	NS
18	Recognize when the call is picked by the customer	3.27	0.61	22.96	0.25	0.52	0.60	0.99	AN	NS
19	Speak to the customer in the appropriate language e.g. hello, hello when there is response	3.21	0.64	21.49	0.24	0.56	0.58	0.99	AN	NS
20	Discuss to the customer about the available farm products, prices, quality and order procedure and at the end show appreciation	3.22	0.56	28.15	0.33	0.68	0.51	0.99	AN	NS
21	Locate the ending call key/button on the keypad	3.27	0.53	36.49	0.58	1.32	0.27	0.98	AN	SN
22	Press the ending call button after confirmation to end the call	3.36	0.61	23.01	0.45	1.91	0.16	0.98	AN	SN

**Research Question 3:** What is the e-marketing (advertisement, bargaining and supply) training needed by women farmers for the marketing of their farm products in Enugu State?

**Ho 3:** There is no significant difference in the mean ratings of the e-Bankers, Computer Base Lecturers, and Business Educators on e-marketing (advertisement, bargaining and supply) skills training needed by women farmers for the marketing of their farm products in Enugu State.

The data for answering the research question 3 and testing of hypothesis is presented in Table 3.

**Table 3:** Mean rating and Analysis of Variance (ANOVA) of the three groups of the respondents on the e-marketing (advertisement, bargaining and supply) skills training needed by women farmers for the marketing of their farm products in Enugu State

S/N	Item Statement	$\bar{X}$	SD	TSS	MSS	F/Ratio	P/Value	E <sup>2</sup>	Rmk	Ho
1	Collect customers' Phone numbers and save to the phone	3.30	0.66	31.37	0.79	2.82	0.06	0.97	AN	NS
2	Select number or name from phone contact	3.20	0.64	29.92	0.28	1.53	0.22	0.99	AN	NS
3	Click on / select messaging box from the cell Phone	3.52	0.65	39.05	0.53	2.51	0.29	0.99	HN	NS
4	Write messages in preferred language to the customers	3.21	0.58	23.92	0.41	0.78	0.46	0.98	AN	NS
5	Recognize SIM and its functions	3.56	0.65	30.74	0.38	0.88	0.46	0.99	HN	NS
6	Select preferred SIM incase if the phone is double SIMs	3.36	0.61	26.74	0.40	1.14	0.32	0.99	AN	NS
7	Send the message to the target customer about the available farm products and cost in weights	3.59	0.68	33.17	1.08	2.66	0.77	0.96	HN	NS
8	Advertise farm products through text message, face book, what sap using cellphone as necessary	3.50	0.59	17.84	0.19	0.77	0.47	0.99	HN	NS
9	Organize Farmers' Association for e-media talk/show for cost effectiveness	3.52	0.64	29.67	0.37	0.77	0.47	0.99	HN	NS
10	Engage in Radio/Television talk programme about farm products packages and contacts	3.33	0.62	28.11	0.34	0.70	0.51	0.99	AN	NS
11	Advertise and sale farm products of high quality to maintain a referral customers through radio/TV	3.61	0.60	25.67	0.23	0.25	0.78	0.99	HN	NS
12	Partnership with community e-media houses for repetitive advertisement of farm products	3.30	0.66	24.74	0.63	2.82	0.07	0.97	AN	NS
13	Arrange the point of collection and payment with customers	3.21	0.64	33.01	0.46	1.02	0.37	0.99	AN	NS
14	Deliver farm products to the customers at door step for payment	3.36	0.65	33.04	0.55	2.44	0.10	0.98	AN	NS

15	Deliver to a Thrift/Trade organization in the community/market for claim and payment	3.21	0.58	23.48	0.54	2.44	0.10	0.98	AN	NS
16	Deliver farm products through the cooperative society	3.36	0.65	26.44	0.36	0.95	0.40	0.99	AN	NS
17	Deliver farm products through the Post Office and arrange for payment	3.73	0.69	46.50	0.55	2.71	0.68	0.99	HN	NS

**Research Question 4:** What is the training procedure to be adopted by trainers for the training of women farmers for e-marketing of their farm products in Enugu State?

**Ho 4:** There is no significant difference in the mean ratings of the training procedures to be adopted by the trainers (bank instructors, Computer Lecturers and Business Educators) for the training of women farmers on e-marketing of their farm products in Enugu State.

The data for answering the research question 4 and testing of hypothesis is presented in Table 4.

**Table 4:** Mean ratings and Analysis of Variance (ANOVA) of the three groups of the respondents on the training procedure to be adopted by the trainers for the training of women farmers on e-marketing of their farm products in Enugu State

S/N	Item Statement	$\bar{X}$	SD	TSS	MSS	F/Ratio	P/Val	E <sup>2</sup>	Rmk	Ho
<b>A. Planning of Instruction or Training</b>										
1	Revision of the identified instructional content, materials and activities to be carried out by the trainees and trainers (research question 1 & 2)	3.07	0.71	36.67	0.34	0.33	0.72	0.99	AN	NS
2	Select the contents to be taught to the women farmers	3.40	0.64	29.48	0.29	0.34	0.72	0.99	AN	NS
3	Determine / state the objectives to be achieved by the learners during training (intended learning outcome)	3.30	0.62	27.37	0.51	1.74	0.18	0.98	AN	NS
4	Determine the major concepts to be taught to the learners	3.38	0.62	27.26	0.46	1.48	0.24	0.98	AN	NS
5	Select appropriate materials for teaching each aspects of e-marketing	3.19	0.65	30.69	0.71	2.45	0.09	0.98	AN	NS
6	Select methods / techniques for effective teaching of each topic of electronics marketing	3.32	0.60	25.75	0.35	0.95	0.39	0.99	AN	NS
7	Determine appropriate assessment techniques to use on the learners	3.15	0.66	20.06	2.96	3.70	0.03	0.85	AN	S*
<b>B. Implementing Training Needs Procedure</b>										
8	Arrange the selected appropriate materials logically in order of relationship with objectives to be achieved by the trainees	3.22	0.67	29.37	0.26	0.25	0.78	0.99	AN	NS

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9	Teach the trainees from known to unknown using appropriate materials	3.24	0.65	32.49	0.56	1.49	0.23	0.98	AN	NS
10	Arrange the selected appropriate materials logically in order of relationship with objectives to be achieved by the trainees	3.32	0.67	21.14	2.30	6.01	0.04	0.89	AN	S*
11	Teach the trainees from known to unknown using appropriate materials	3.30	0.65	29.11	0.19	0.00	0.10	0.99	AN	NS
12	Arrange the selected appropriate materials logically in order of relationship with objectives to be achieved by the trainees	3.21	0.67	22.08	2.43	5.12	0.01	0.88	AN	S*
13	Teach the trainees from known to unknown using appropriate materials	3.34	0.65	32.96	0.61	1.71	0.18	0.98	AN	NS
14	Arrange the selected appropriate materials logically in order of relationship with objectives to be achieved by the trainees	3.22	0.67	33.92	0.41	0.72	0.41	0.99	AN	NS
15	Teach the trainees from known to unknown using appropriate materials	3.24	0.65	36.06	0.56	1.23	0.31	0.98	AN	NS
16	Arrange the selected appropriate materials logically in order of relationship with objectives to be achieved by the trainees	3.32	0.68	21.97	0.17	0.11	0.90	0.99	AN	NS
17	Teach the trainees from known to unknown using appropriate materials	3.19	0.65	29.01	0.33	0.64	0.53	0.99	AN	NS
18	Arrange the selected appropriate materials logically in order of relationship with objectives to be achieved by the trainees	3.26	0.67	23.97	0.23	0.38	0.69	0.99	AN	NS
19	Teach the trainees from known to unknown using appropriate materials	3.40	0.65	34.11	0.78	2.42	0.09	0.98	AN	NS
20	Arrange the selected appropriate materials logically in order of relationship with objectives to be achieved by the trainees	3.38	0.67	35.29	0.99	2.09	0.09	0.97	AN	NS
21	Teach the trainees from known to unknown using appropriate materials	3.29	0.65	25.67	0.69	3.08	0.05	0.97	AN	NS

The data in Table 4 reveals as follows: the mean values of items 1-21 ranged from 3.07 – 3.40 and each is greater than the real limit of 1.50. This indicates that each item is needed by the trainers for effective training of the women farmers for e-marketing of their farm

products in Enugu State. The standard deviation of the seventeen items ranged from 0.58 – 0.69 and were less than 1.96 (95% confidence limit). This indicates that the respondents were not far from the means or from one another in their responses. The P-values of the fourteen out of the twenty one items ranged from 0.05 – 0.72 and each is greater than 0.05. This indicates that there is no significant difference in the responses of the three groups on the nineteen out of twenty one items as training procedure to be adopted by the trainers. The P-value of three items (7, 10 and 12) ranged between 0.01 – 0.04 and each is less than 0.05. This shows that there is significant difference in the mean ratings of the 3 groups of the respondents.

#### 4. Discussion of Findings

The study found out 16 items was rated by the raters on essential basic numeracy and language knowledge in technology needed by women farmers for e-marketing of their farm products in Enugu State. They include: Recognize and count number: 0 1 2 3 4 4 5 6 7 8 9, recognize even numbers such as: 2 4 6 8 10 12 14 16 18 ...100. 3 write figures on chalk board / notebooks: 0 – 9, and 13 others as contained in table 1. The findings is in agreement with the report of Gasperini and Acker (2009), in a study on education for rural people: the role of education, training and capacity development in poverty reduction in many economies, where it was found out that basic literacy and numeracy may be the first in training rural farmers, that basic education and skills development are considered critical to the development of rural farm population, that education is a key asset determining house hold ability to high return activities (whether in agriculture or outside) and escape poverty. The findings is also in line with report of Agu (2013) in an article on the application of ICT in Agricultural Sector: Women Perspective where the author submitted that women farmers needed minimum basic education which should enable them to read and write in order to have access to ICT for expansion of local market, that the proper training of rural female farmers in effective usage of ICTs can empower them to function globally among the rest.

On the mobile phone operation skills, twenty two items were rated by the respondents as the mobile phone operational skills needed by women farmers. They include: recognize the parts of cell phone and functions of each part, recognize cell phone essential accessories and use them like: charger, case, earphone among the rest, learn some essentials on cell phone operation from the manual such as: on, off, put the phone in silent and 19 others as contained in Table 2. The findings is in consonance with the findings of Bakare (2017) in a study on management skills required by farmers in making cell phones effective for boosting agricultural production in Ekiti State, Nigeria where the author found out that the farmers need operational skills in: locate power switch on the cell phone, power on the cell phone and scroll to locate phone book on the cell phone, and 29 others. The findings is also in line with Lee, Mendelson, Rammohan and Srivastava (2017) in a study on Technology in Agribusiness: Opportunities to Drive Value Chain in USA where the authors found out that technology has helped grow agricultural

marketplaces from merely physical places to physical and digital markets where numbers of online services in selling and purchases of agribusiness goods are made.

On the e-marketing skills, the study found out that seventeen items were rated by the respondents as e-marketing skills needed by women for e-marketing of their farm products in Enugu State. This include: collect customers' phone numbers and save to the phone, select number or name from phone contact, click on / select messaging box from the cell phone, and seventeen others as contained in Table 3. The findings is in conformity with the findings of Ehmke, Ernst, Hopkins, and Tweeten (2001) in a study on the market for e-commerce services in Agriculture in Ohio, USA where the authors found out that farmers sold products through mastering and application of skills of e-commerce. The authors stated that further those farmers usually make use of technology to supply their customers' products like grain, seed and feed. The findings is also in conformity with the findings of Koko and Koelane (2013) in a study on reflecting on Information and Communication Technology (ICT) in marketing from a marketer's and student perspective in Bloemfontein, South Africa where the authors found that the computer literacy is imperative for accessing the various forms of ICT for marketing. The authors further stated that the respondents' knowledge and skills of the various forms of traditional and e-marketing methods regarded telephones (land lines and/or mobile phones through Facebook, television, radio, e-mail and short message services (SMS) would help the respondents in marketing activities.

On the training procedure 21 items were rated by the raters as the procedural steps needed by trainers for training women farmers for competency in the use of technology for marketing of their farm products in Enugu State. They include: revision of the identified instructional content, materials and activities to be carried out by the trainees and trainers (research question 1, 2 and 3), select the contents to be taught to the women farmers and eighteen others as contained in Table 4. The findings is in agreement with the findings of Abdul and Ali (1999) in a study on Training and professional development of Agricultural Extension Workers' in Bangladesh where the authors found that the most important part in a training programme after a need for training has been identified is the curriculum which specifies what will be taught, how it will be taught and evaluation. The findings is also in agreement with the findings of Muhammed (2016) in a study on development of resource management programme in Sorghum production enterprises for training secondary school graduates for employment in Kwara and Kogi States, Nigeria, where the author found that those graduates required training in marketing of sorghum grain, sorghum flour and material resource for effective sorghum marketing enterprise. If the identified skills in table 1-4 are packaged and involve in training women farmers using the procedure in Table 4, they will be competent in marketing their products effectively beyond their immediate environment for their economic security and sustainability. On the hypotheses tested, the differences in their various area of operation do not influence their ratings. However, on the findings of hypotheses tested, the differentials in their various area of operation do not influence their rating much.



## 5. Conclusion

Farm products produced are incomplete until they are bought by individuals and industrial consumers in the market. Among the suppliers are the women farmers who are restricted not to have direct to consumers by the middlemen; hence, women farmers become poor due to inability to integrate technologies (cellphone and computer) in selling of their farm products. This study, therefore focused on the following: identification of essential basic language and knowledge in technology (cellphone and computers) needed by women farmers, mobile phone operation skills needed by women farmers, e-marketing (advertisement, bargaining and supply) needed by women farmers and training procedure to be adopted by the trainers for the training of women farmers on marketing of their farm products in Enugu State for economic sustainability. The study found out that: 16 skill items in essential basic numeracy and language knowledge in technology, 22 skills in mobile phone operation, 17 skills on e-marketing needed by women farmers and 21 items on training procedure to be adopted by the trainers for training women farmers are needed by women farmers for profitable marketing of their farm products in Enugu State.

Based on the findings of the study, it is therefore recommended that the identified skills be utilized by competent trainers using the identified training procedure by the study to empower women farmers with identified skills by their study for e-marketing of their products for economic sustainability and enhancement in Enugu State.

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