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Constraints to Conducting Agricultural Research Uptake Activities Among Researchers in Rivers State, Nigeria

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Abstract

The study assessed constraints faced by agriculture researchers in conducting research uptake activities in tertiary institutions in Rivers State, Nigeria. Simple random sampling was used to select one hundred and eighty-two agriculture researchers from the three universities that have faculty of Agriculture in Rivers State. Data for the study was collected using a questionnaire and in-depth interviews while analysis of data was carried out using, mean, percentages and the Binary Logit regression model. Results showed that 98% of the researchers were involved in research uptake activities. Publication of journal articles (76%), convening training workshops (60%) and organizing seminars (59%) were the major research uptake activities conducted by agriculture researchers in the State. Insufficient funds ($\bar{x}$ =3.68), lack of basic facilities ($\bar{x}$ =3.54) and poor synergy between researchers and policymakers ($\bar{x}$ =3.48) were major constraints faced by agriculture researchers in conducting research uptake activities. Agriculture researchers' socioeconomic characteristics were not significant determinants of agriculture researchers' level of involvement in research uptake activities in the study area. The provision of basic structural facilities and financial support by university management will aid agricultural researchers' involvement in research uptake activities.

Introduction

Agriculture remains the backbone of many African country's economies, particularly in developing countries like Nigeria. It is one of the most effective tools employed by such economies in alleviating hunger and poverty (International Food Policy Research Institute, 2018; Ifeanyi-obi, 2020). In Nigeria, agriculture contributes significantly to the economy not only in the provision of food for its teaming population, it also provides employment opportunities, raw materials for the industries as well as contributes to the generation of foreign exchange earnings for the country. A two-third of the country's population particularly the poor rural masses do not only earn their livelihood support from agriculture, it also forms part of their culture (Etale et al, 2021)

Despite the important place of agriculture to both the country's economy as well as the livelihoods of a significant population of the country, it still faces numerous challenges ranging from poor infrastructural facilities, a low number of agricultural extension agents, extreme weather events, the poor financial base of farmers, poor government support to poor skill and knowledge problems. The Federal government of Nigeria through the Federal Ministry of Agriculture and Rural Development in collaboration with other related agencies had made conscientious efforts both in enacting policies and initiating various intervention programmes to help alleviate the many problems of the agricultural sector. Yet, the overall goal of food sufficiency is yet to be achieved. On the other hand, agricultural researchers both at the universities and research institutes in the country, on a frequent basis engage in diverse research activities with the aim of generating solutions to existing agricultural problems or generate innovations that could improve the productivity of the agricultural sector.

According to Nader and Masoud (2019), agricultural research is any activity aimed at improving the productivity and quality of crops and livestock produce, irrigation, farm mechanization, storage methods and better management of resources. It is essential because these new discoveries generated through agricultural research help in upgrading the standard of living of individuals and the country as a whole. It is undertaken to bring about improvement and development in the sector. Through research, credible evidence that is capable of bringing about vital difference if utilized in decision-making and practice could be generated. Research has brought about recorded improvements in the agricultural sector particularly in the area of high-yielding seed varieties, inorganic fertilizers, pesticides, improved breed of dairy cows, improved poultry breed, improved feed, forage utilization and use of Artificial Insemination (Melesse, 2018).

While various innovative outputs are been generated by agricultural research, it is important for researchers to note that the research cycle does not end in generating these outputs. A research process culminates in sharing of research findings. The research cycle comprises of planning research, gathering data, analyzing collected data, generating findings and sharing research findings (Ifeanyi-obi, 2020). When research findings are not shared or mainstreamed into policy and practice, the overall

goal of conducting research remains unachieved. The research aims at finding solutions to existing problems hence the need of implementing research uptake activities. Solutions discovered cannot be useful until they are utilized in solving the intended problems.

Research uptake activities involve all activities that are aimed at communicating research findings to the target audience. It is aimed at ensuring that the target audience utilizes the outcomes of the research. Ifeanyi-obi (2022), described research uptake as all activities carried out to facilitate the mainstreaming of research output/findings into policy and practice. Research uptake includes all the actions that aid and contribute to the use of research evidence by policy-makers, practitioners and other development actors. It is aimed at stimulating end users of agricultural research findings including policymakers, agricultural practitioners, researchers, and/or implementers to become aware of, access and apply research knowledge/findings/output in agricultural policy and practice. Research uptake activities include organizing workshops, conferences, policy forums and symposia, developing publicity material, advisory services to stakeholders, publishing journal articles and producing documentaries, etc (Ifeanyi-obi, 2022). Research uptake is important as it ensures that research findings are utilized hence impacting policy and practice and facilitating development in the agricultural sector.

Unfortunately, despite the potential of research uptake activities in enhancing policy and practice in the agricultural sector, not much attention has been given to the conduct of this activity and the barriers that are encountered by agriculture researchers particularly those in the universities in implementing it. The results of some insightful and relevant research works conducted by researchers remain unused by policymakers and other audiences. These research findings end up lying idle in bookshelves or at most get published in journals and books. Some of these researches were funded by donor organisations with the intent of generating solutions to facilitate the achievement of the sustainable development goal of Zero hunger. Unfortunately, the value of such investment cannot be sufficiently harvested if the outcome of such research activity lay idle in bookshelves.

The use of research findings by policymakers and communities in Nigeria has been very limited and challenged by numerous factors, among which, a lack of communication between researchers and policymakers and a lack of involvement of policymakers and community in determining the research to be done remains topical (Ememe & Igbokwe, 2018). Research-industry-policy linkages in the agricultural sector remain poor owing to many factors. It is important to explore more challenges in order to proffer effective solutions to them hence motivating the conduct of research uptake activities. This could facilitate the development of the agricultural sect both at a local and national levels. Very little research exists in the area of uptake activities. The focus has been on the conduct of the research itself. This research, therefore, intends to contribute to filling this gap.

Objectives of the Study

The broad objective of this study was to assess constraints faced by agriculture researchers in conducting research uptake activities in Rivers State.

The specific objectives of this study were to:

1. determine the use of research-uptake activities among agriculture researchers in Rivers State;
2. identify agriculture researchers' perception of research uptake activities
3. determine the constraints to conducting research uptake activities by agriculture researchers in Rivers State and
4. Determine the influence of selected socio-economic characteristics of agriculture researchers on their involvement in research uptake activities.

Methodology

This study was undertaken in Rivers State, located at latitude $4^0$45'N and longitude $6^0$50' E. The State has an area of 11,077 Km^2 and a population of 7,303,924 (according to projected population by state (2012-2016).

The population of this study comprised all agriculture researchers in Rivers State. For the purpose of this study, only agriculture researchers who are lecturers were used for the study. This population is believed to properly understand the meaning and importance of research uptake activities. Also, only Federal and state universities that have Faculty of Agriculture in the state were used. This includes River State University, University of Port Harcourt, Choba and Ignatius Ajuru University of Education, Rumuolumeni.

Simple random sampling was used to select the sample for this study. From each of the Departments in the faculties of Agriculture in the three Universities (University of Port Harcourt, Rivers State University and Ignatius Ajuru University of Education) in Rivers State, 95% of the total number of lecturers was selected across the departments. The University of Port Harcourt has six departments, namely; Agricultural Economics and Extension (N = 20), Animal Science (N = 14), Crop and Soil Science (N = 31), Food and Nutrition (N = 6), Forestry and Wildlife (N = 17) and Fisheries (N = 14), while Rivers State University has seven departments namely; Agricultural and Applied Economics (N = 10), Agricultural Extension and Rural Development (N = 8), Animal Science (N = 11), Crop and Soil Science (N = 11), Fisheries and Aquatic life (N = 8), Food Science and Technology (N = 16), Forestry and Environment (N = 9). Ignatius Ajuru University has four departments, namely; Agricultural Economics and Extension (N = 5), Agricultural Education (N = 2), Agronomy (N = 5) and Animal Science (N = 4). This gave a total population of one hundred and eighty-nine (189) lecturers for the study out of which one hundred and eighty-two were randomly selected (95% across all departments).

Questionnaire administration and in-depth interviews were used in the collection of data from agricultural researchers. Agriculture Researchers' perception of research uptake and constraints to organizing research uptake was captured with a Four-point Likert-type scale of strongly agree, agree, disagree and strongly disagree which were assigned weights of 4,3,2 and 1 respectively. Mean values of 2.5 and above showed agreement to the statement while values less than 2.5 showed disagreement. Researchers' involvement in research uptake was captured with a Four-point Likert-type scale of highly involved (4), moderately involved (3), involved (2) and rarely involved (1). A midpoint of 2.5 and above showed high involvement in research uptake while values less than 2.5 implies low involvement.

Data collected were analysed using mean, and percentages while the influence of selected socio-economic characteristics of agriculture lecturers on their involvement in research uptake activities was analysed using Binary logit regression analysis. The model specification for the Binary Logit regression is stated below:

Model specification

$C_{ij} = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \beta_5X_5 + \beta_6X_6 + \beta_7X_7 + u$

C_{ij}, = Agriculture researchers' involvement in research uptake activities = 1 High involvement and 0 Low involvement
X_1 = Sex (Male = 1, Female = 2)
X_2= Age (measured in number of years)
X_3= Highest level of education (PhD holder= 2, non-PhD holder=1)
X_4 = Household size (Actual number of persons living in the household)
X_5 = Monthly income level (Below N100,000 = 1, N100,000 – N200,000 = 2 and Above N200,000 = 3)
X_6 = Attendance of Training on Research uptake (Yes = 1, No =2)
X_7 = Membership of professional associations (Yes = 1, No =2)
u = stochastic error term.

Results and Discussion

Use of Research Uptake Activities by Agriculture Researchers

The result in Table 1 shows the use of research uptake activities by agriculture researchers

Publication of journal articles (76%), organization of training workshops (60%) and seminars (59%) were the major research uptake activities carried out by the researchers. Using social networking websites to share research findings (50%) and organization of online events via Zoom (41%) were found to be relatively used by agriculture researchers. This could be an aftermath of the covid-19 pandemic, during which online means of meetings and sharing information were massively used and thereafter adopted by many due to the lesser cost involved as well as its ability to overcome geographical limitations.

Low use of Television and Radio programmes in the dissemination of research findings could be a result of poor linkage between the researchers, government, policymakers and industry. It was gathered from the in-depth interview that researchers are sometimes expected to pay exorbitant prices by television and radio houses for airing their research outcomes. This should not be the responsibility of the researchers but rather the responsible organs of government like the Agricultural Development programme. These agencies must create avenues for researchers to broadcast their research outcomes. The high use of journal publications to disseminate research findings may be a result of the importance placed on journal publications in the promotion of agriculture researchers particularly those in the Universities. It is important for the university administration to consider embedding other research uptake activities in scoring the researchers during promotion appraisal. This will encourage their involvement in the use of such research uptake activities enhancing collaboration and linkages with policymakers and industries.

Table 1: Use of research uptake activities by agriculture researchers

Research uptake activities	Percentages (%)
Hosted a conference as my research uptake activity.	46.2
Convened a policy discourse to disseminate my research findings.	30.8
Convened a training workshop to train the audience on my research findings	59.9
Organized seminars or symposia to disseminate my research findings.	57.3
Published Journal article.	77.5
Published a Book Chapter.	57.8
Developed and disseminate publicity materials (please specify which material you published).	28.6
I use Television and Radio programmes to share my research findings.	29.7
Advisory services to stakeholders.	47.3
Organized a seminar to discuss my research findings.	59.3
Produced Documentaries to disseminate my research findings.	23.1
Used a Social Networking platform to share my research findings (please kindly specify which platforms were used below).	50.0
I organize online events via Zoom and other online platforms to share my research findings.	41.2

Source: Field Survey, 2021

Agriculture Researchers' Involvement and Level of Involvement in Research Uptake Activities

The result in Table 2 shows agriculture researchers' involvement and level of involvement in research uptake activities. The result shows that most of the agriculture researchers in the Faculty of Agriculture in the study area were involved (94%) in

conducting research uptake activities. From Table 1 shows that the publication of journal articles is the major research uptake activity implemented by the researchers. The question is, how many of the target audience and other information users access these journal articles? This should constitute a major concern to both academia and responsible agencies. The general goal of the research is to produce new information, products or technologies that could contribute to poverty reduction as well as improve the lives of poor people. This will only happen if the research is understood and used to inform decisions and intervention projects. Research outcomes published in only journal articles mostly keep circulating among researchers who are the producers of this information. It is important to devise actionable ways of ensuring research outcomes get to other users like farmers, policymakers and development actors.

As regards the level of involvement, it was shown that the majority (65%) were highly involved in conducting research uptake activities. Information from Table 1 shows that this high level of involvement could be in the publication of journal articles hence the need to invest in enhancing other means of research uptake among agricultural researchers.

Table 2: Level of involvement in research uptake activities

Involvement in research uptake activities		**Percentage (%)**
Involvement in conducting research uptake activities		98.4
Level of involvement in research uptake activities	Highly Involved	64.8
	Moderately Involved	29.1
	Involved	3.3
	Rarely Involved	1.2

Source: Field Survey, 2021

Agriculture Researcher's Perception of Research Uptake Activities

The result in Table 3 shows agriculture researchers' perception of research uptake activities. The result shows that researchers in Rivers State mainly perceive research uptake activities to be an avenue for sharing research findings ($\bar{x}$ =3.7), is ttime-consuming ($\bar{x}$ =3.4), facilitated by sufficient funding ($\bar{x}$=3.5) and institutional support ($\bar{x}$ =3.4). They also perceive research uptake to require much capital ($\bar{x}$ =3.4), stressful ($\bar{x}$ =3.2), need much capacity ($\bar{x}$ =3.1) and should be implemented by university management rather than individuals ($\bar{x}$ =3.3).

Perception is mostly based on existing knowledge and influences behaviour as well as one's responsiveness to innovation adoption (Woods et al., 2017). The attitude toward an innovation is determined by the combination of knowledge and perceptions

about it (Aluko et al, 2021). Agricultural lecturers' perception of research uptake could be as a result of their level of involvement in research uptake activities. There is a need for knowledge updates on research uptake in order to stimulate better perception as well as a more positive disposition towards research uptake activities among the researchers. This is paramount as their perception influences participation in uptake activities. Information harnessed from in-depth interviews supports the result above and further showcased that researcher's perception of research uptake is mainly based on their experiences in engaging in an uptake programme which is mainly journal article publication. It was gathered that the research statement and ethics of many universities do not have substantial provisions for supporting uptake activities. This needs to be addressed as it is important for universities to expose their staff to the uptake benefits and guide to uptake conduct as to increase the conduct of uptake activities.

Table 3. Agricultural researchers' perception of research uptake activities

Statements	Mean	Standard Deviation
Research uptake activity allows me to share the findings of my research work to my audience	3.7**	1.8
Research uptake activities are facilitated by sufficient funding	3.5**	1.6
Research uptake activities is time-consuming	3.4**	1.7
Research uptake activities require much capital	3.4**	1.5
Institutional support facilitates researchers' involvement in conducting research uptake activities	3.4**	1.7
Research uptake activities should be implemented by university management and not individual researchers	3.3**	0.8
Conducting research uptake activities is stressful	3.2**	1.3
Possession of the needed capacity encourages the conduct of research uptake among researchers	3.1**	1.1
Lack of interest on the side of stakeholders affects the conduct of research uptake activities	2.9**	0.9
Poor participation of stakeholders in research uptake activities discourages researchers from conducting research uptake activities	2.9**	0.7
There is limited time to conduct research uptake activities	2.7**	0.8
Research uptake activities is not an important component of my work	1.9*	0.6

Source: Field Survey, 2021 * mean value ≥ 2.5.

Constraints to Conducting Research Uptake Activities by Agriculture Researchers

The result in Table 6 shows constraints to research uptake conducted by lecturers. The result shows the major constraints to conducting research uptake by agriculture researchers to be insufficient funds ($\bar{x}$ =3.6), lack of basic facilities to conduct research uptake activities ($\bar{x}$ =3.3), the poor linkage between researchers, policymakers and other stakeholders ($\bar{x}$ =3.4), lack of incentives for conducting research uptake activities reducing the interest of researchers ($\bar{x}$ = 3.3) and the gap between university management and other government institution ($\bar{x}$ =3.2).

Also, information gathered through the in-depth interview conducted showed that many universities do not have support structures to encourage researchers towards implementing research uptake activities. Lack of funding and poor linkages between academia, industry and policymakers were consistently mentioned by researchers to be the major barrier to conducting research uptake activity. Strengthening alliances with key policy actors could be an effective means of improving the communication of research findings into the policy process (Shishi, Mishal & Helena, 2020). Similarly, Erismann et al (2021) in their study of how to bring research evidence into policy found that direct engagement of stakeholders with researchers, involvement of stakeholders in the design and implementation of the research project and stakeholders' participation to coproduce knowledge were essential in fostering research uptake into policies and practices.

These highlight the need for strategic linkages between researchers and other stakeholders in data generation and dissemination. To strengthen linkages between researchers and policymakers and facilitate research utilization, pertinent issues including enhancing policy makers' capacity to drive research and uptake research, the non-challant attitude of policymakers to use research findings and the communication gap between policymakers and researchers must be addressed (Slabbert & Preez, 2021).

Funding has been found to be not just a basic requirement in conducting research uptake activities (Evans et al, 2018; Sigudla & Maritz, 2021), but also a key factor limiting researchers from engaging with other stakeholders (Ankamah-Lomotey, 2019) hence the need for more deliberate effort towards providing funds for uptake activities by both university administration and funding agencies. This will help to ensure that optimal values are harnessed from the resources invested in research conduct.

Table 4. Constraints to conducting research uptake activities by agriculture researchers

Statements	Mean	Standard Deviation
Conducting research uptake activities is hindered by insufficient funds	3.7**	2.0
Lack of basic facilities to conduct research uptake activities	3.5**	1,6
The poor linkage between researchers and policy makers and other stakeholders causes bottleneck to research uptake activities	3.5**	1.9
lack of incentives for conducting research uptake activities reduces the interest of researcher to conduct research uptake activities	3.4**	1.5
Gap between university management and other government institutions make conduct of research uptake activities	3.3**	1.7
Lack of sufficient internet data hinders conduct of online research uptake activities	3.1**	1.4
Bureaucratic structure of most agricultural institutions limits the conduct of research uptake activities	3.1**	1.6
Engaging relevant stakeholders to discuss about conducting research uptake activities is a challenge	3.0**	1.1
Lack of skilled facilitators is also a hindrance to research uptake	3.0**	1.3
Limited time to conduct research uptake activities	2.9**	0.7
Lack of researchers centralized site for sharing information hinders research uptake conduct	2.9**	0.9

I do not possess the needed skill to conduct research uptake activity effectively	1.7*	0.6

Source: Field Survey, 2021 ** mean value ≥ 2.5

Influence of socio-economic characteristics of agriculture researchers on their involvement in research uptake activities.

Table 5 shows that the overall logistic regression was not statistically significant implying that the explanatory variables estimated did not distinguish agriculture researchers who were highly involved in research uptake activities from those lowly involved. The p-values of the coefficient of socio-economic characteristics were not statistically significant, that is, age, gender, the highest level of education, household size, monthly income, attendance of training, and membership of professional association were not significant determinants of researchers' level of involvement in research uptake activities, and so, did not influence researchers involved in research uptake activities.

This result could imply that the factors having a significant influence on researchers' level of involvement in research uptake activities are not inherent in their socio-economic characteristics. Linkage and funding factors as highlighted by researchers during the interview schedule could be the prominent factors having a significant influence on their involvement in research uptake activities. Shishi et al (2020) found that researchers' collaboration with policymakers in research conduct encourages involvement in uptake activities and as well increases the effectiveness of their research uptake activities. This collaboration should begin with research planning to ensure that the needs and interests of concerned policymakers and industrialists are addressed in the research (Ifeanyi-obi, 2022) thereby sustaining their commitment and participation throughout the research life span.

Table 5: Influence of socio-economic characteristics of agriculture researchers on their involvement in research uptake activities.

Variable	Coefficient	Std. error	Z-stat
Gender ($X_{1)}$	0.357	0.616	0.336*
Age (X_2)	1.053	0.676	2.424*
Highest level of Education (X_3)	0.345	0.887	0.151*
Household size (X_4)	0.041	0.183	0.051*
Monthly Income (X_5)		0.748	0.018*
	0.100		
Attendance of Training activity on research uptake (X_6)	-0.648	1.147	0.319*

Membership of Professional Association (X_7)	19.089	2.279E4	0.000*
Constant	0.461	1.481	0.097*
Omnibus Test Chi-square	323.023		
Prob>chi square	98.555[a]		
Nagelkerke R-square	0.027		

Source: Field Survey, 2021. *P≥0.05

Conclusion and Recommendations

Agriculture researchers are engaged in the conduct of research uptake activities though their involvement is skewed towards uptake activities used for promotion exercises like the publication of journal articles and attendance of professional conferences. Insufficient funds, lack of incentives, lack of basic facilities, limited time, and poor linkage between researchers and policymakers were the major bottleneck to conducting research uptake activities among agriculture researchers. University management should ensure the provision of basic facilities; the need for uninterrupted internet connectivity in the school environment is also crucial as many researchers were found to engage in the use of social networking websites and online platforms to share their research findings.

Furthermore, there is a need for university management to facilitate synergy between researchers and industry by providing needed platforms for this synergy to thrive. This will aid the easy mainstreaming of research outcomes into policy and practice. Embedding research impact into promotion criteria could also motivate researchers to engage more in uptake activities. It is also important that research funders extend funding to cover research uptake activities as this will encourage agriculture researchers to engage more in research uptake activities.

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