

FORMS AND LEVELS OF COLLABORATION BETWEEN ACADEMIC INSTITUTIONS AND AGRO-INDUSTRIAL FIRMS IN ONDO STATE, NIGERIA

Akinnagbe, O. M, Okunlola, J. O., Ayodele, O. V, and Ipinmoye, O. E.



[DOI10.51459/jostir.2026.2.1.0218](https://doi.org/10.51459/jostir.2026.2.1.0218)

Department of
Agricultural Extension and
Communication Technology,
Federal University of
Technology, Akure.

Correspondence

omakinnagbe@futa.edu.ng

History

Received: 02-01-2026

Accepted: 16-02-2026

Published: April, 2026

ABSTRACT

The study ascertained forms and levels of collaboration between academic institutions and agro-industrial firms in Ondo State, Nigeria. Multistage sampling technique was used to select 180 academics, agro-industrial firms, and relevant government agencies. Data were collected through questionnaires. Data collected were analysed using frequencies, percentages, mean statics and charts. The results of the findings revealed that the major forms of collaboration between academic institutions and agro-industrial firms from both academic and industry perspective was Student Industrial Work Experience Scheme (SIWES) (100.0%). The level of collaboration, the industry and academic committed to partnership was rated high ($\bar{x} = 2.92$). The study further shows that academic play a greater roles in the area of research outputs contribution to value-chain development, and providing technical ($\bar{x} = 3.50$). Agro-industrial firms support research-driven solution by providing data and information needed for academic research, adoption of innovations developed by academic institutions ($\bar{x} = 3.10$). The major constraints militating against collaboration between academic institution and agro-industrial firms were limited inter-institutional collaboration frameworks ($\bar{x} = 3.42$) and bureaucracy and administrative bottlenecks ($\bar{x} = 3.10$). The major forms of research support expected from academic institution by agro-industrial firm were providing expert technical advice (90.0%), skill gap analysis and aligning training programmes to meet agro-industrial firm needs (90.0%), and solving specific production and processing challenges (89.0%). The study recommends that academic institutions and agro-industrial firms should shift from predominantly training-based interactions to solution-driven research collaboration by collaboratively shaping solution-focused research agendas aligned with industrial needs.

Keywords: collaboration, academic institutions and agro-industrial firms

1. | Introduction

The fundamental pillar of Nigeria's economy lies in agriculture sector which plays a significant role in food security, economic growth, rural development, raw materials for industries and industrial development. Nigerian agro-industrial firms are expanding rapidly by taking part in production, processing, and input

supply to drive food security and industrial growth. Agro-industries are organization or industries that derive their raw materials from agriculture that engage in processing, preservation, and marketing activities in order to convert the primary agricultural products into finished goods.

Academic-industrial firms' collaboration has emerged globally as a cornerstone for



<https://www.futa.edu.ng>



<https://jostir.futa.edu.ng>

innovation, economic competitiveness, and sustainable development. Partnerships bring together the knowledge creation role of academic institutions and the practical innovation needs of industry, facilitating knowledge transfer, technology commercialisation, and human capital development. This trend is particularly important in the agricultural sector, where bridging the gap between research and practice is crucial for addressing persistent challenges related to productivity, value chain development, and food security. Academic–industry partnerships have also been seen as a mechanism for fostering innovation, strengthening economic performance, and advancing sustainable development. This form of engagement represents a strategic pathway for advancing agricultural transformation and fostering industrial growth.

Innovation has been identified as a key driver of economic growth and societal advancement by increasing productivity and introducing new goods and services. Agricultural innovation encompasses the development and application of new technologies, practices, and business models to improve productivity and sustainability (World Bank, 2020). Evidence from high-income economies demonstrates that countries investing heavily in research and development (R&D) often experience sustained economic progress. Studies have shown that partnerships between universities and agro-industrial firms in other regions have led to significant breakthroughs in crop genetics and post-harvest technologies (Abdullahi *et al.*, 2021). Such innovations not only boost productivity but also generate employment opportunities, contributing to broader economic growth.

According to World Bank, (2017), agro-industrial firms deeply on research-based innovations, skilled manpower, and adaptive technologies in both domestic and international markets. These innovations and economic development are critical drivers of growth for a nation's building, most importantly in regions with significant agricultural

potential like Ondo state. Academic institutions, particularly universities of agriculture and technology, are strategically positioned to support this process through research, training, extension services, and technology transfer. Therefore, structured and functional collaboration between these agro-industrial and academic sectors is seen as a cornerstone for agricultural transformation and industrial development.

Building solid ties between academic institutions and agro-industrial businesses can boost value chain development, encourage sustainable economic growth, and accelerate increases in agricultural production. While industry partners offer chances for the application of scientific discoveries and practical insights, academic institutions are well-positioned to provide the research, knowledge, and technical expertise required to meet the difficulties encountered by the agro-industrial sector. Academic-industry partnerships facilitate knowledge transfer, technological commercialization, and human capital development by bringing together the practical innovation needs of industry with the knowledge generating function of academic institutions. Strengthening university-agro-industrial business partnerships is widely recognized as a means of accelerating agricultural industrialization and transformation in many developing nations, including Nigeria. Particularly in knowledge-intensive and agrarian economies, cooperation between academic institutions and business is becoming more widely acknowledged as a vital force behind innovation, economic expansion, and sustainable development. While industries offer avenues for the commercialization, scaling, and real-world implementation of research outputs, universities and research institutions act as centers for knowledge creation, human capital development, and technological innovation (Etzkowitz & Leydesdorff, 2000; Ankrah & Al-Tabbaa, 2015).

Collaboration between universities and industries has been recognized as a key tactic for promoting

sustainable development. As noted by Filho, Azul, & Brandli (2021), this type of collaborations enhances research and development initiatives, fosters innovation for attractiveness, encourages information sharing, entrepreneurship, and technical advancements for promoting sustainability (Barnes and Pashby, 2020). Agro-industries firms drive the practical application of knowledge to address real-world challenges, whereas the universities act as centers for knowledge creation and develop the skilled workforce. This will result in providing students with practical knowledge that corresponds with the changing demands of the labour market. These partnerships enable students to engage in internships and hands-on training, which enhance their problem-solving skills and increase the students' employability. The role of government in this partnership is to facilitate regulatory frameworks, providing financial incentives, and encouraging innovation-driven collaboration between academia and agro-industrial firms (Ezepue *et al.*, 2025)

It is also important to note that collaborations between university and industrial firms should result in industry-aligned curricula, cutting-edge research, and job-ready graduates that can contribute to high-tech and economic advancement to produce graduates with practical skills, industries benefit from academic research and innovation. However, in many university agro-industrial firm collaborations, there is limited industry involvement in curriculum design, and inadequate internship opportunities for students. This study therefore seeks to address this gap by examining the forms and levels of collaboration between academic institutions and agro-industrial firms in Ondo State, Nigeria, and by determining the roles of academia in providing research-driven solutions, with a view to generating empirical evidence that can inform policy, practice, and future research.

1.1 | Objective of the study

The broad objective of this study is to assess the existing condition of collaboration between academic institutions and agro-industrial firms in Ondo State Nigeria. Specifically, the study sought to:

1. ascertain the forms of collaboration between academic institutions and agro-industrial firms;
2. level of collaboration between academic institutions and agro-industrial firms; and
3. determine the roles of academia in providing research-driven solutions.

2. | Methodology

This study was conducted in Ondo state. The state, located in South West Nigeria, lies between latitude 5°45' and 7°52'N and longitudes 4°20' and 6°05'E. For public institutions, the state has two federal and three state universities, one federal polytechnic, one college of agriculture state polytechnic each, a university, one federal and one state polytechnics, and one college of agriculture. There are so many agro-industrial firms located in the state actively engaged in agricultural research, innovation, and training.

Multistage sampling procedure was used in selecting the respondents. In the first stage, two public universities (Federal University of Technology and Adekunle Ajasin University, Akungba Akoko) were purposively selected because of the agricultural-related courses. From the selected universities, thirty (30) lecturers and administrators were purposively selected because of their nature of work relating to research and collaborations, making a total of sixty respondents. In the second stage, ten (10) agro-industrial firms in the state were purposively sampled as it relates to production, processing, and marketing from the agro-industrial firms. In the third stage, twenty (20) administrators from Ondo state ministries of agriculture and industry

were purposively sampled because of their related work with agro-industrial firms. Hence, a sample size of 180 respondents from academic institutions, agro-industrial firms, and government agencies constituted the sample size for the study.

To ascertain the forms of collaboration between academic institutions and agro-industrial firms, respondents were provided with different forms of collaboration they engaged in. The respondents were also asked to indicate their level of collaboration on a 4 Likert type scale of very high, high, low and very low with values of 4, 3, 2 and 1 respectively. These values were added and divided by 4 to get the mean cut-off of 2.5 which was used in deciding their level of collaboration. To ascertain the role of academia in providing research-driven solutions and constraints to collaboration between academic institutions and agro-industrial firms, respondents were provided with different variables, on a 4-point Likert type scale of strongly agree, agree, disagree and strongly disagree with values of 4, 3, 2, and 1, respectively. The values were added and divided by 4 to get the mean cut-off of 2.5, which was used in deciding the major roles. Data were analyzed using frequencies, percentages, means, and charts. Statistical Package for Social Science (SPSS) constituted the software used in data analysis.

3 | Results and Discussion

3.1 | Socioeconomic Characteristics of Academic Respondents

Figure 1 show that majority (91.7%) of the academic respondents were lecturers, while 8.3% were administrators. In Figure 2, higher proportion (58.3%) of academic respondents had between 11 and 20 years of working experience, while 41.7% had 1–10 years of working experience. This implies that the respondents were experienced and are expected to be engage in collaborations.

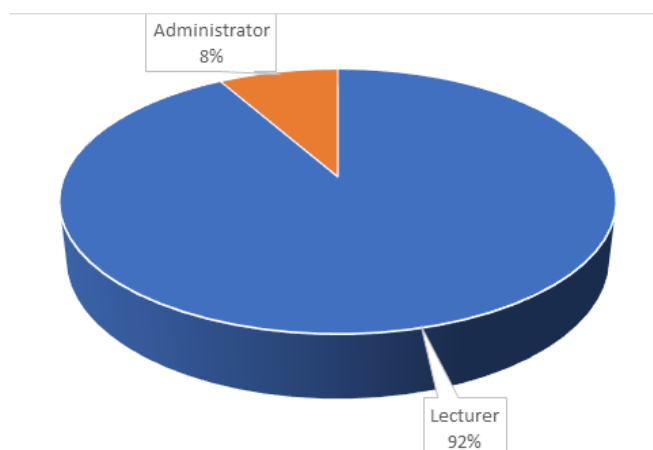


Figure 1 | Position / designation of academics

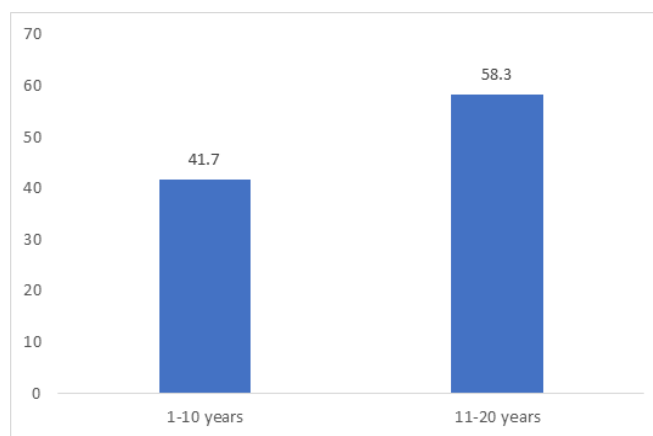


Figure 2 | Years of experience of academics

3.2 | Demographic Characteristics of Agro-Industrial Firms

Majority (60.0%) of the agro-industrial firms were engaged in livestock and poultry production as showed in Table 1. About 10% of the respondents were engaged in crop processing, food/feed manufacturing, storage/packaging, and marketing/distribution. This implies that production activities predominate. Also, 70.0% of respondents were managers, implying that they are better positioned to report on collaboration activities that have taken place in their organisations which are relevant to decision making, strategic priorities and innovation needs.

Results in Table 1 further showed that majority (70.0%) of the respondents had between 11 and 20 years of industry working experience. The

implication of this is that, it will enhance the credibility of inputs into collaborative discussions and supports more informed decision-making and also deliver tangible outcomes. This finding aligns with the assertions of Pertuzé *et al.*, (2023) and Rybnicek and Königsgruber (2023) that prior

industry experience among partners enhances the effectiveness and outcomes of academia–industry collaboration, as experienced practitioners contribute valuable domain expertise, managerial perspectives, and practical insights that improve research alignment and facilitate successful implementation.

Table 1 | Type of Agro-Industrial Activity

Type of Agro-Industrial Activity	Frequency	Percentage (%)
Crop processing	6	10.0
Livestock poultry	36	60.0
Food/Feed manufacturing	6	10.0
storage/packaging	6	10.0
marketing/distribution	6	10.0
Position in firm		
Owner/CEO	6	10.0
Manager	42	70.0
Quality control officer	12	20.0
Years of Experience		
<5	6	10.0
5-10	12	20.0
11-20	42	70.0
Size of Firm		
Small	12	20.0
Medium	36	60.0
Large	12	20.0

Field Survey, 2025

The result in Table 1 further revealed that Majority (60.0%) of the respondents had a medium firm size.

3.3 | Demographic Characteristics of Government Agencies

About 40% and 30% of the government agency respondents were largely senior officials, serving as Directors and Deputy Directors, respectively, while the remaining 30.0% occupied other senior management positions. About 55% of respondents had over 20 years of public service experience, while 45.0% had between 11 and 20 years of experience. This shows that the respondents have high levels of working experience to anticipate challenges,

direct bureaucratic processes, and deliver informed guidance for collaborative initiatives. This is in line with Purnell (2024) findings, that public service experience can strengthen collaborative authority and enhance partnerships.

Meanwhile, only 15.0% of government respondents reported having participated in or supervised projects involving academic institutions. This finding emphasizes the need for capacity-building programmes, workshops, and training to enable government officials engaged in collaborative projects to contribute to research agenda development and supervise joint initiatives.

Table 2 | Demographic Characteristics of Government Agencies

Position/Designation	Frequency	Percentage (%)
Director	8	40.0
Deputy director	6	30.0
Other	6	30.0
Years of Experience in Public Service		
11-20 years	9	45.0
>20 years	11	55.0
Participation or supervision of projects involving academic institutions		
Yes	9	15.0
No	17	85.0

Field survey, 2025

3.4 | Forms of Collaboration between academic institutions and agro-industrial firms

Results in Figure 3 showed the forms of collaboration between academic institutions and agro-industrial firms based on academic perspective. The major forms of collaborations include Student Industrial Work Experience Scheme (SIWES) (100.0%), co-

hosting of conferences and workshops (58.3%), joint research projects (50.0%), consultancy services (50.0%), and Memoranda of Understanding (MoUs) (50.0%). From the perspective of agro-industrial respondents, the results in Table 3 revealed that the major forms of collaboration between agro-industrial forms and academic institution include internships and SIWES placement (80.0%), internships and

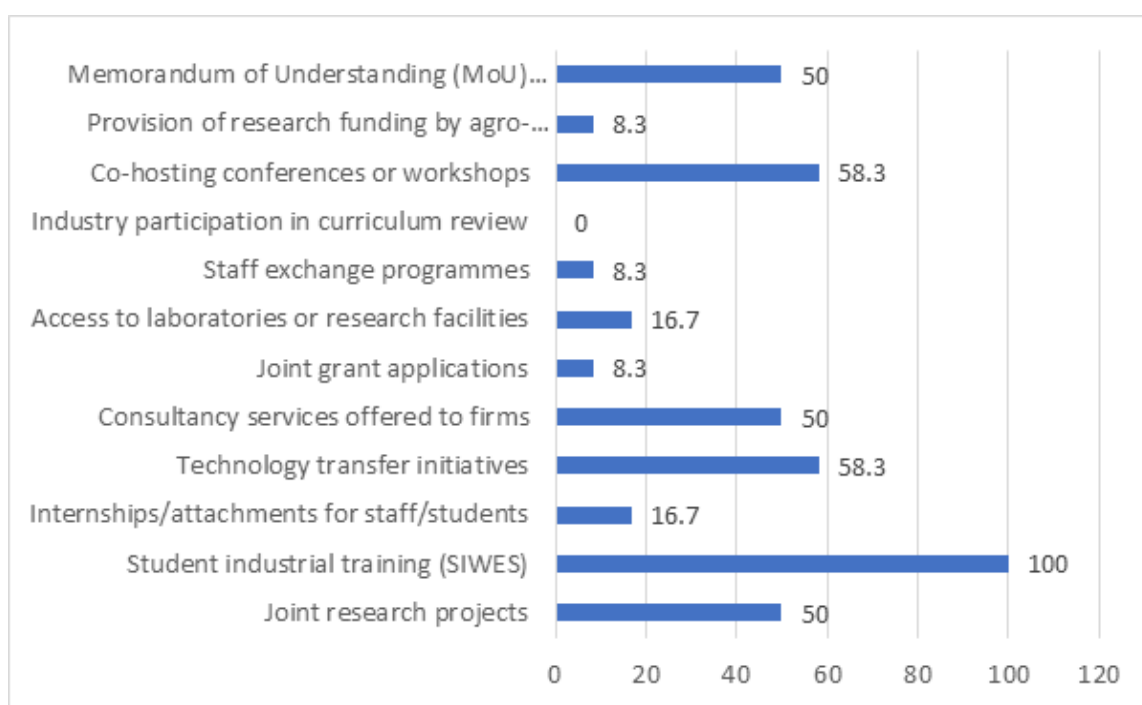


Figure 3 | Forms of collaboration between academic institutions and agro-industrial firms
Field survey, 2025

Table 3 | Forms of Collaboration between agro-industrial firms and academic institutions (Industry Perspective)

Collaboration Form	Yes
Internships/SIWES placements	48(80.0)
internships and attachment for students	30(50.0)
Joint research projects	-
Testing or piloting of new technologies	-
Staff training by academia	18(30.0)
Consultancy or advisory services	18(30.0)
Supply of raw materials for research	12(20.0)
Formal MoUs with academic institutions	6(10.0)
Participation in workshops organized by academia	24(40.0)
Joint product development initiatives	6(10.0)

attachment for students (50.0%) and participation in academic workshops (40.0%). This implies that collaborations are oriented toward practical skills growth and workforce readiness, facilitate knowledge exchange, and provide expert solutions to industry challenges. It also helps in strengthening skills expansion, research application, innovation acceptance, and institutional relations

Student Industrial Work Experience Scheme (SIWES) is a programme established to provide students in tertiary institutions in Nigeria, with real-world, hands-on experience in their respective fields of study aimed at bridging the gap between theoretical knowledge and real-world practice. According to International Labour Organisation (ILO) (2023), the programme helps to strengthen knowledge transfer and workforce preparedness. Co-hosting of conferences and workshops allows various stakeholders to share knowledge, insights, exchange thoughts, innovations, best practices and coordinate efforts around common objectives, which could lead to future joint initiatives. It helps in the identification of key challenges, and orientation of research activities toward practical, real-world needs.

3.5 | Level of Collaboration between academic institutions and agro-industrial firms

Results in Table 4 revealed the level of collaboration between academic institutions and agro-industrial firms in the study area. The frequency of collaboration between institutions, agro-industrial firms and government agency is very low ($\bar{x} = 1.17$). This implies that interactions and joint activities among these stakeholders occur occasionally, and where such collaborations exist, they are not sustained over times.

Results in Table 4 further revealed that the quality of the existing collaboration is considered high ($\bar{x} = 2.50$). This implies that although the collaboration may not occur very frequently, the collaborations in place are effective, well-coordinated, and generate tangible results. The respondents perceive the partnerships as productive and reliable. As noted by Akpojo & Chukwuemeke (2025), strong institutional research linkages that translate into technological development and industrial problem-solving remain under-developed.

Table 4 | Level of Collaboration between academic institutions and agro-industrial firms

Statement	Very High (4)	High (3)	Low (2)	Very Low (1)	Mean	SD
Frequency of collaboration between institution and agro-industrial firms			10(16.7)	50(83.3)	1.17	0.376
Quality of collaboration		30(50.0)	30(50.0)		2.50	0.504
Industry commitment to partnerships		5(8.3)	55(91.7)		2.92	0.279
Academic commitment to partnerships		5(8.3)	55(91.7)		2.92	0.279

3.6 | Role of Academia in Providing Research-Driven Solutions to Agro-Industrial Firms

The results in Table 5 revealed the role of academia in providing research-driven solution to agro-industrial firms. The respondents asserted that academia provides evidence-based solutions to challenges of agro-industries ($\bar{x} = 3.50$), supports agro-industry with technical expertise ($\bar{x} = 3.50$), help firms adopt modern technologies ($\bar{x} = 3.50$), contribute to value-chain development ($\bar{x} = 3.50$). These results showed that promoting partnerships with academic institutions can substantially enhance productivity, competitiveness, and sustainability in the agro-industrial sector. These findings are in support of Dutse *et al.*, (2021), who reported that university industry collaboration in Nigeria helps in fostering innovation, facilitate knowledge transfer, and enhance productivity by applying academic research and expertise to industry needs.

The results further showed that academic research addresses real problems faced by agro-industrial firms ($\bar{x} = 3.08$), helps firms improve market-oriented production practices ($\bar{x} = 3.08$), effective translation of research findings into practical applications that address industry challenges and enhance operational outcomes ($\bar{x} = 3.08$), Academia serves as a bridge connecting firms, government, and stakeholders, promoting partnerships, and innovation ecosystems that advance the agro-industrial sector ($\bar{x} = 3.08$).

This implies that research activities in academic institutions are increasingly oriented toward solving practical problems rather than solely pursuing theoretical knowledge. The findings are consistent with the study by Akinbobola and Akinnagbe (2023), which found that academic institutions facilitate connections among firms, government, and stakeholders, enhancing partnerships and innovation ecosystems that advance the agro-industrial sector. Also the results support the findings of Igbokwe-Ibeto and Anyanwu (2022), which indicate that university–industry linkages enhance the commercialization and practical application of academic research to address industrial challenge.

Also, the findings revealed that academic research facilitates the creation of new products and the improvement of processing methods ($\bar{x} = 2.67$), academic institutions support industries by providing training for their staff as necessary ($\bar{x} = 2.58$). The results demonstrate that academic research contributes significantly to innovation and operational advancement in agro-industrial firms.

3.7 | Role of Agro-Industrial Firms in Supporting Research-Driven Solutions

These major roles of agro-industrial firms in collaborative research-driven solutions include: providing funding for research activities ($\bar{x} = 3.10$), providing internships and on-the-job training opportunity to build practical skills aligned with

Table 5 | Role of Academia in Providing Research-Driven Solutions

Academia’s Role in Providing Research-Driven Solutions	Strongly Agree (4)	Agree (3)	Disagree (2)	Strongly Disagree (1)	Mean	SD
Academic research addresses real problems faced by agro-industrial firms.	5(8.3)	55(91.7)	-	-	3.08	0.279
Research findings from academic have been effectively translated into practice and utilized by agro-industrial firms	5(8.3)	50(83.3)	5(8.3)	-	3.00	0.412
academia provides evidence-based solutions to challenges of agro-industries	30(50.0)	30(50.0)	-	-	3.50	0.504
Research outputs contribute to value-chain development.	30(50.0)	30(50.0)	-	-	3.50	0.504
Academia supports agro-industry with technical expertise.	30(50.0)	30(50.0)	-	-	3.50	0.504
Research innovations help firms adopt modern technologies.	30(50.0)	30(50.0)	-	-	3.50	0.504
Academia serves as a bridge connecting firms, government, and stakeholders, promoting partnerships, and innovation ecosystems that advance the agro-industrial sector	-	60(100.0)	-	-	3.00	0.000
Academic institutions support industries by providing training for their staff as necessary.	-	35(58.3)	25(41.7)	-	2.58	0.497
academic research facilitates the creation of new products and the improvement of processing methods.	5(8.3)	30(50.0)	25(41.7)	-	2.67	0.629
Academia helps firms improve market-oriented production practices.	-	60(100.0)	-	-	3.00	0.000

Note: Figures in parentheses are in percentage

industry needs ($\bar{x} = 3.10$) and translating research findings into product that can benefit the broader agro-industrial sector ($\bar{x} = 3.10$). The results confirmed that agro-industrial firms play a fundamental role in enabling research-driven solutions. Agro-industrial firms also serve as effective bridges between university and industry requirements. This process helps produce a workforce that is better equipped to

meet the demands of agro-industrial sector, while promoting sustained collaboration that advances research, strengthens national food security, and enhances industrial competitiveness.

Agro-industrial firms roles in supporting research-driven solutions, as indicated in Table 6 include solving practical challenges in production, processing and marketing processes ($\bar{x} = 3.00$), and

participation in joint research activities with academic institutions ($\bar{x} = 2.60$). Agro-industrial firms roles in pursuit of research-based solutions to technical, production, and marketing challenges demonstrate a strong demand for scientific knowledge. This demand-driven approach fosters collaboration by aligning academic research priorities with industry requirements, thereby enhancing the likelihood that

research outputs will be applied in practice. These findings aligns with Soam *et al.*, (2023), that agro-industrial firms engage in academic collaborations to access research results and innovative capacity capable of addressing technical, production, and marketing challenges. The result is also in line with the Nigerian Content Development & Monitoring Board (2024) view that joint research activities

Table 6 | Role of Agro-Industrial Firms in Supporting Research-Driven Solutions

Statement	Strongly Agree (4)	Agree (3)	Disagree (2)	Strongly Disagree (1)	Mean	Std. Deviation
Our firm actively participates in research activities with academic institutions	12(20.0%)	12(20.0%)	36(60.0%)	-	2.60	.807
Funding Research Initiatives	12(20.0%)	42(70.0%)	6(10.0%)	-	3.10	.543
Translating research findings into commercial products, processes, or services that can benefit the broader agro-industrial sector	18(30.0%)	30(50.0%)	12(20.0%)	-	3.10	.706
Offering internships, apprenticeships, or on-the-job training for researchers, students, or staff to build practical skills aligned with industry needs	18(30.0%)	30(50.0%)	12(20.0%)	-	3.10	.706
Contributing in solving practical challenges in production processing and marketing.	12(20.0%)	36(60.0%)	12(20.0%)	-	3.00	.638

Note: Figures in parentheses are in percentage

between industry and academia are important in ensuring that research outputs are translated into practical and impactful innovations and also for developing results to challenges.

3.8 | Challenges to Collaboration between Academic Institutions and Agro-Industrial Firms

The results in Table 7 showed the challenges to collaboration between academic institutions and

agro-industrial firms. The major challenges were: limited inter-institutional collaboration frameworks ($\bar{x} = 3.42$), bureaucracy and administrative bottlenecks ($\bar{x} = 3.25$), poor communication gap ($\bar{x} = 3.00$), and low level of mutual trust ($\bar{x} = 3.00$). The study establishes that there is an absence of formal structures, policies, or mechanisms to guide partnerships between universities and agro-industrial firms. Collaborations are often delayed as a result of undue administrative processes and

Table 7 | Challenges to Collaboration between Academic Institutions and Agro-Industrial Firms

Challenges	Strongly Agree (4)	Agree (3)	Disagree (2)	Strongly Disagree (1)	Mean	Std. Deviation
Low productivity and inefficiency	-	-	10(16.7)	50(83.7)	1.17	.376
Weak value chain integration	-	30(50.0)	5(8.3)	25(41.7)	2.08	.962
Limited access to modern technologies	-	-	5(8.3)	25(41.7)	2.08	.962
Misaligned goals or priorities	-	55(91.7)	5(8.3)	-	2.92	.279
Low level of mutual trust	25(41.7)	10(16.7)	25(41.7)	-	3.00	.921
Lack of innovation adoption	5(8.3)	55(91.7)	-	-	3.08	.279
Bureaucracy and Administrative Bottlenecks	25(41.7)	30(50.0)	-	5(8.3)	3.25	.836
Limited inter-institutional collaboration frameworks	25(41.7)	35(58.3)	-	-	3.42	.497
Poor institutional support	25(41.7)	5(8.3)	5(8.3)	25(41.7)	2.50	1.396
Poor communication gap	25(41.7)	10(16.7)	25(41.7)	-	3.00	.921

rigid institutional procedures, which could affect the delay in research projects, responsiveness to industry needs, and discourage firms future engagement with academic institutions. Also, lack of trust and ineffective communication between academics and industry stakeholders can prevent the open sharing of knowledge, data, and resources, which could lead to misunderstandings and misaligned expectations that are necessary for successful collaboration. The findings are in line with the results of Obianuju and Nwadike (2023), Bagoni (2023), and Isah (2025). In their findings, there are challenges of limited inter-institutional collaboration frameworks, bureaucracy, administrative bottlenecks, poor communication, and low levels of mutual trust that reflect structural and relational barriers in Nigerian university–industry partnerships, where weak policy guidance, rigid administrative procedures, and low trust among stakeholders hinder effective collaboration.

Table 7 also revealed that challenges to collaboration between academic institutions and agro-industrial firms include: misaligned goals ($\bar{x} = 2.50$), and poor institutional support ($\bar{x} = 2.50$). often time, some academic research agendas may not align with

the production and market needs of firms, thereby producing outputs that are less practical or applicable for industry use. In some cases, collaboration is often weakened by inadequate institutional support, which can include limited funding for joint projects, lack of incentives for academia to engage in industry partnerships, and weak administrative structures that fail to facilitate or prioritize such engagement.

The implication of these is that it will lead to underutilization of knowledge and innovations, reducing the practical benefits of university–industry collaborations and slowing the translation of academic research into actionable results for the agro-industrial sector. The results are in agreement with Bagoni (2023), who found that weak institutional support and limited use of collaboration platforms deter academia–industry engagement.

3.9 | Forms of Research Support Expected from Academic Institutions by Agro-Industrial Firms

Results in Table 8 revealed the forms of research support that agro-industrial firms expect from academic institutions to enhance collaboration. The

Table 8 | Form of research support expected from academic institutions by Agro-Industrial Firms

Research support expected from academic institutions by agro-industrial firms	Percentage (%)
Developing solutions to improve efficiency, productivity, and profitability	77.0
Conducting studies that address real operational, technical, or production challenges faced by firms	81.0
Providing research-based insights to enhance operational efficiency and inform strategic market decisions of agro-industrial firms	64.0
Providing information and expert advice on specialized areas like agronomy, post-harvest management	90.0
Enhancing human capital and technical skills within firms to better adopt innovations	65.0
Development of new or improved agro-products and by-products	70.0
Implementation of automated irrigation technologies to optimize crop production	10.0
Shelf-life extension and packaging innovation (e.g. research support in the area of post harvest losses)	70.0
Capacity-building programmes on rainforest management for sustainable agro-industrial practices	60.0
Research targeted at solving specific production, processing, and operational challenges	89.0
Development of decision-support tools and digital platforms	74.0
Facilitating joint grant applications, field trials, or innovation projects	68.0
Skills gap analysis and aligning training programs to meet agro-industrial firm needs	90.0

major support expected from academic institutions include provision of information and expert advice on specialized areas like agronomy, post-harvest management (90.0%), skills gap analysis and aligning training programs to meet agro-industrial firm needs (90.0%), research targeted at solving specific production, processing, and operational challenges (89.0%) and conducting studies that address real operational, technical, or production challenges faced by firms (81.0%).

Agro-industrial firms depend on academic expertise to improve production efficiency and product quality, and they expect academic research to be solution-oriented. Additionally, academic institutions are expected to tailor their capacity-building initiatives

to meet the specific needs of agro-industrial firms. Meeting these expectations can enhance the relevance of academic research, increase the attractiveness of the industry, and foster practical innovation in the agro-industrial sector. Olasupo *et al.*, (2024) noted that Collaboration between academic institutions and industry is essential to ensure that academic outputs address real industry needs and contribute to socio-economic development.

Other forms of research support that agro-industrial firms expect from academic institutions include: developing solutions to improve efficiency, productivity, and profitability (77.0%), development of decision-support tools and digital platforms (74.0%), shelf-life extension and packaging innovation

(70.0%), facilitating joint grant applications, field trials, or innovation projects (68.0%) enhancing human capital and technical skills within firms to better adopt innovations (65.0%) and capacity-building programmes on rainforest management for sustainable agro-industrial practices (60.0%).

4 | Conclusion and Recommendations

This study focuses on forms and levels of collaboration between academic institutions and agro-industrial firms. Results revealed that there is a strong commitment to collaboration, despite the partial frequency of interactions. Both academic institutions and agro-industrial firms play an important role in providing research-driven solutions by providing evidence-based solutions to challenges of agro-industries and in offering internships, apprenticeships, or on-the-job training for researchers, students, or staff. Bureaucracy and administrative bottlenecks, poor communication

gap, and a low level of mutual trust were major factors that could limit collaborations. The study recommends that academic institutions and agro-industrial firms should shift from predominantly training-based interactions to solution-driven research collaboration by collaboratively shaping solution-focused research agendas aligned with industrial needs.

5 | Acknowledgement

We gratefully acknowledge the Tertiary Education Trust Fund (TETFund), Nigeria, for approving our project and providing the funding necessary to carry out this study. We also express our appreciation to the management of the Federal University of Technology, Akure, particularly the Centre for Research and Development (CERAD), for facilitating the release of the grant that enabled the commencement of the project (Reference number: TETF/DR&D/CE/UNI/AKURE/IBR/2024).

Reference

- Akinbobola, T. P., & Akinagbe, O. M. (2023). Determinants of linkages between agricultural institutions and agro-allied industries in Southwest Nigeria. *Environment, Development and Sustainability*, 25(1), 228–248.
- Akpojo, B. E., & Chukwuemeke, H. E. (2025). *Institution-industry collaboration in business education: A strategy to industrialization and technological development in Delta and Edo States, Nigeria*. *Nigerian Journal of Business Education*
- Ankrah, S., & Al-Tabbaa, O. (2015). Universities–industry collaboration: A systematic review. *Scandinavian Journal of Management*, 31(3), 387–408. <https://doi.org/10.1016/j.scaman.2015.02.003>
- Bagoni, A. A. (2023). *Academia-industry linkages: Alternative platforms for engagement under Nigerian law*. *Advances in Sciences and Humanities*, 9(2), 34–40.
- Barnes, T., & Pashby, I. (2020). University–industry collaboration and sustainable innovation: A review of current practice and future directions. *Technovation*, 94–95, 102–118. <https://doi.org/10.1016/j.technovation.2020.102118>
- Dutse, A. Y., Bayero, M. M., Musa, K. I., & Jibrin, M. (2021). *University–industry linkages, enabling policies and innovative behaviours of universities in Nigeria*. *International Journal of Technology Management & Sustainable Development*, 20, 305–324.
- Etzkowitz, H., & Leydesdorff, L. (2000). The dynamics of innovation: From national systems and “Mode 2” to a triple helix of university–industry–government relations. *Research*

- Policy*, 29(2), 109–123. [https://doi.org/10.1016/S0048-7333\(99\)00055-4](https://doi.org/10.1016/S0048-7333(99)00055-4)
- Ezepue E.I., Chukwu C.J., Nweke P.O., Okafor N., Abiaeme J.U. (2025) University-Industry Partnership for Sustainable Development: A Strategic Approach to Educational Management Practices in STEM Disciplines. *Metallurgical and Materials Engineering* 31(2):53-67.
- Filho, W. L., Anabela Azul, Luciana Brandli, *et al.*, (2021). The role of universities in fostering sustainable development through collaboration and innovation. *Journal of Cleaner Production*, 290, 125–134. <https://doi.org/10.1016/j.jclepro.2021.125134>
- Igbokwe-Ibeto, C. J., & Anyanwu, F. C. (2022). *University–industry linkages and commercialization of research findings: Evidence from South-East Nigeria*. *Public Policy and International Affairs Academic Journal*, 4(4), 15–28. Retrieved from <https://cirdjournals.com/index.php/ppiaaj/article/view/808>
- International Labour Organization. (2023). *Skills for a greener future: Workforce development in agro-industry*. ILO Publishing.
- Isah, A. (2025). Administrative bottlenecks and institutional trust in Nigerian university–industry partnerships. *Nigerian Journal of Educational Management*, 23(1), 88–104.
- Nigerian Content Development & Monitoring Board. (2024). *Research collaboration meeting highlights academia-industry innovation roles*. Retrieved from: https://ncdmb.gov.ng/at-research-collaboration-meeting-ncdmb-challenges-industry-academia-on-cutting-edge-solutions-reaffirms-commitment/?utm_source=chatgpt.com
- Obianuju, N., & Nwadike, C. (2023). Barriers to effective university–industry collaboration in Nigeria: Structural and relational perspectives. *African Journal of Management Research*, 15(2), 45–60.
- Olasupo, N. A., Ogunbanwo, S. T., & Grillo, A. J. (2024). *The need for partnership between the university and industry: Nigerian perspective*. *International Journal of Latest Technology in Engineering Management & Applied Science*, 13(10), 73–84.
- Pertuzé, J. A., *et al.*, (2023). *Best practices for industry–university collaboration*. MIT Sloan Management Review. Retrieved from <https://sloanreview.mit.edu/article/best-practices-for-industry-university-collaboration/>
- Purnell, P. J. (2024). *Transdisciplinary research: How much is academia heeding the call to work more closely with societal stakeholders such as industry, government, and nonprofits?* *arXiv*. <https://arxiv.org/abs/2408.14024> (provides insight into the importance of multi-stakeholder collaboration involving government, industry, and academia).
- Rybnicek, R., & Königsgruber, R. (2023). *Establishing successful university–industry collaborations: Barriers and enablers deconstructed*. *The Journal of Technology Transfer*, 48, 900–931. <https://doi.org/10.1007/s10961-022-09932-2>
- Soam, S. K., Subbanna, Y. B., Rathore, S., Kumar, V. V. S., & *et al.*, (2023). *Academia–industry linkages for sustainable innovation in agriculture higher education in India*. *Sustainability*, 15(23).16450: 1-17.
- World Bank. (2017). *Agribusiness indicators: Nigeria*. World Bank Group.
- World Bank. (2020). *Agricultural innovation systems: An investment sourcebook* (2nd ed.). World Bank Group. <https://doi.org/10.1596/978-1-4648-1487-4>