

**Extended Abstract**  
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<b>Paper Title</b>	A network analysis of research on African agricultural development
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<b>Abstract</b>	<i>200 words max</i>
<p>There has been a substantial increase in published research on various aspects of the economies of African countries over the past couple of decades, giving rise to questions such as “who does the research” – is it scholars on and from the continent, or is it scholars from the developed world – as well as “is the research concentrated geographically” and “what is the nature and extent of collaboration between researchers”? Here, social network analysis is used to address the last of these questions in the field of the economics of African agricultural development. The results show an unexpected high degree of collaboration between African and developed country scholars, and the dominance of international institutions, especially from the CGIAR.</p>	
<b>Keywords</b>	e.g. Bioenergy, Energy Efficiency
<b>JEL Code</b>	O13; O19 see: <a href="http://www.aeaweb.org/jel/guide/jel.php?class=Q">www.aeaweb.org/jel/guide/jel.php?class=Q</a> )
<b>Introduction</b>	<i>100 – 250 words</i>
<p>A number of recent papers have addressed questions around the nature and origins of research on African development. Fourie (2019), for example, analysed publications on African economic history in the top four Economic History journals, and found that there has been a large increase in writings on Africa, but not by African scholars. Porteous (2020), on the other hand, looked at the geographic concentration in Africa of publications in the broad field of Economics - most of the research was done in five countries that hold only 16% of Africa’s population. Two further articles have addressed the broader field of development studies and the representation of scholars from developing countries in general (Cummings and Hoebink, 2017 and Amaranth et al., 2021). Both found that developing country authors were underrepresented. However, none of these publications look in depth at collaboration between scholars in developed and developing countries.</p> <p>The purpose of this paper is to analyse these interactions in the narrower field of the economics of agricultural development, building on a data base that was constructed specifically for this purpose (Vink, 2021).</p>	
<b>Methodology</b>	<i>100 – 250</i>

	<i>words</i>
<p>This study uses social network analysis to deepen understanding of the strategies of scholars of African agriculture, such as whether and to what extent authors in African institutions leverage connections to developed country institutions (and to what type of institutions) or whether and to what extent scholars from beyond the continent leverage authors in African countries. The network is created by arranging the home institutions of authors into connected clusters using the ForceAtlas2 algorithm in Gephi (Jacomy et. al, 2014). Graph theory was applied to visualise co-authorship networks. Frequent collaboration between institutional pairs places them in the same cluster, while clusters can be connected through links between a subset of institutions. Graphically, institutions that have the highest frequency of high quality connections are located at the centre of a cluster, and the most central cluster is placed at the centre of the network. Central institutions have authors that are likely to collaborate with authors from <i>many</i> other institutions; furthermore, an institution is considered to be a more central node if its authors tend to collaborate with other institutions that <i>also</i> collaborate widely. Eigenvector centrality quantifies the extent of “connectedness” of each node to other institutions, while the number of collaborations across institutional pairs is shown by curved lines with the thickness more informative than the length. “Bubbles” of the same colour show that the component institutions belong to the same “club”, while the extent of collaboration within institutions is also shown.</p>	
<b>Results</b>	<i>100 – 250 words</i>
<p>The data for this analysis covers the five years from 2016 to 2020, and consists of four components:</p> <ol style="list-style-type: none"> <li>1. All articles on African agriculture that were published in the four highest ranking core Agricultural Economics journals by (ranked CiteScore), namely Agricultural Economics; the American Journal of Agricultural Economics, the European Review of Agricultural Economics; and the Journal of Agricultural Economics;</li> <li>2. All articles on the economics of African agricultural development from the two highest ranking general journals in this field (Food Policy and World Development);</li> <li>3. Two Africa-based Journals, namely Agrekon and the African Journal of Agricultural and Resource Economics;</li> <li>4. Three conferences (the IAAE conference in Vancouver in 2018, and two African Association of Agricultural Economists conferences, namely 2016 in Addis Ababa and 2019 in Abuja).</li> </ol> <p>All authors were included in the analysis, and authors were identified by the location of the institution rather than their country of origin. Institutions that produced more than 15 papers were identified separately, while institutions with fewer than 5 papers in each of the classes were excluded from the analysis.</p>	

The results differ from those found in the earlier analyses identified above in a number of significant ways. These differences are to be found in the relatively wide group of countries where the research has been conducted, in the high degree of collaboration between scholars in developed country and African institutions, and in the dominance of the components of the CGIAR in the research as a whole and in the collaborations between institutions.

**Discussion and Conclusion**

**100 – 250  
words**

Legitimate concerns have been expressed about the quality of research on the economics of African agricultural development, with some concerned about the quality of scholarship within the continent, and others that research conducted by developed country scholars lacks context. Collaboration between scholars and institutions from Africa and from the developed countries is an obvious strategy to address these concerns, but the literature shows that this kind of collaboration is unlikely to be found in a number of allied fields of economic research. In the specific case of African agricultural development, however, the leading role played by international institutions such as the CGIAR and multilateral bodies such as the World Bank and the FAO has created the necessary space for such collaboration and in the process increased our knowledge about the preconditions and pathways for agricultural development. This bodes well in attempts to address other lacunae in African scholarship in these fields such as the relative lack of opportunities for women in the field of research, policy analysis and policy making, the extent of geographic concentration of research and the propensity to avoid the risks inherent in research that tries to better understand the future.

