

Enhancing Rural Marketing Practices in Africa Through AI Supported Education

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DOI: <https://doi.org/10.47772/IJRISS.2026.1015EC0050>

Received: 03 May 2026; Accepted: 08 May 2026; Published: 08 June 2026

ABSTRACT

The role of Artificial Intelligence (AI) in supporting rural based marketing practices has never been fully appreciated, yet AI is increasingly becoming important in organizations and continues to shape how organizations operate, especially in Africa. The influence of AI will definitely continue to significantly shape the way organizations operate during the 21st century and beyond. Rural based marketing contributes significantly towards socio economic development in Africa, particularly in the areas of agricultural growth, employment, and improved livelihoods. The changing dynamics in the rural marketing coupled with the movement of people from the rural to urban areas poses a major challenge as the urban areas become overcrowded with high unemployment and increased crime rates. It is projected that by the year 2050, 65% of Africa's population will live in the urban areas This scenario posing a major challenge of feeding the urban population that will be depending on food supplies from rural area. Adoption of AI in Africa remains low, particularly in the rural areas, yet this is where most of the agricultural activities employing 60-70% of labour force, and accounting for 30 -40% of GDP is found. Using the social theory of change and Schumpeter's theory of innovation, this study explores the role that Artificial Intelligence can play in supporting education to enhance rural marketing practices for transformative and sustainable development in Africa. The researchers adopted critical document review approach in their research. The study established that governments in developing countries are working hard to come up with relevant policies and legal frameworks to assist in the implementation of AI practices, but these have not been given sufficient recognition to rural marketing. The study further found that use of AI can be instrumental in enhancing teaching and learning, automating administrative tasks, and promoting personalized learning experiences in promoting agricultural marketing. Finally, the study revealed that while Kenya through the Ministry of education has been working with tech organizations to build teacher capacity in using AI effectively in schools, this is yet to have a significant impact especially on part of rural marketing practices. Rural areas continue to experience major challenges including poor infrastructure, lack of electricity and high levels of illiteracy.

Keywords: Artificial Intelligence, education, rural marketing, socio-economic transformation.

INTRODUCTION

Rural marketing has often been seen as a key enabler to rural development, and can help to sustain the urban populations by supplying essential commodities to the urban populations. The rural areas are where you find some land on which farming activities can take place to produce various products needed by both rural and urban populations.

The World Bank Group (2027) indicate that rural non-farm activities account for 35 to 50 percent of rural income in developing countries, an indication that in the rural areas, there are many activities from which the rural communities earn, not necessarily directly linked to Agriculture. Such activities include transport, marketing, retail and construction. How can AI be used to support these non-farm activities in the rural area? And particularly the marketing aspect which is key linking producers to markets?

It is in the rural areas where education on best marketing practices for farm products is most needed, and it is in these areas where agricultural extension officers are most needed to help the farming communities. Both formal as well as informal education is therefore very necessary in those regions. Artificial intelligence is not really a new terminology and was first used in the 50s with the initial intention of creating machines capable of reasoning and using human language. This term was coined by John McCarthy (Dartmouth College), Marvin Minsky (Harvard University), Nathaniel Rochester (IBM), and Claude Shannon (Bell Telephone Laboratories). We note that the idea of coming up with a thinking machine was therefore much earlier, but the use of the term Artificial intelligence is associated with this team. Advances in technology and the use of AI continued since the 1950s, with an accelerated growth since the beginning of the 21st century.

According to the World Bank (2013), Agricultural economy employs 60-70% of labour force, in Africa, and accounts for 30 -40% of GDP. What is worth noting is that most of these farming activities take place in the rural areas? Rural marketing contributes critically towards the economic development and is a major source of employment for the rural areas. However, the use of AI support systems in rural areas is minimal because the rural areas continue to face major challenges such as lack of electricity, poor infrastructure and low literacy levels. Research evidence shows lower literacy levels for rural as compared to urban populations.

Mauritius was the first African country to publish a national AI strategy document in 2018, but since then several other countries have devoted AI strategies. For instance, Ghana has integrated AI into agriculture, mining, energy, and health, while Egypt launched its National AI strategy in 2023, and Senegal developed its AI Strategy in 2023. Likewise, Uganda is developing an AI policy framework to be ready by the end of 2025, while Kenya has launched the national AI Strategy (2025-2030). Similarly, Rwanda has a very elaborate AI policy and indeed, through the GIZ Digital Transformation Centres (DTC) in Africa, there is a well established Digital Transformation Centre in Kigali which shows how AI can effectively be integrated in public sector services and startup ecosystems (ICT WORKS, 2024). In Kenya, the government through the Ministry of Agriculture and Livestock Development seeks to promote the use of digital tools like mobile apps and e-commerce to enhance market access for small farmers (GoK, 2023). In Kenya, the government through the Ministry of Agriculture and Livestock Development seeks to promote the use of digital tools like mobile apps and e-commerce to enhance market access for small farmers (GoK, 2023). What this tells us is that African countries are putting a lot of effort towards streamlining AI adoption, which is quite commendable.

UNESCO has been in the forefront in supporting countries in Africa to adopt competency based Frameworks that target students and teachers. However, according to UNESCO's data of 2021, only about 15 of its member states have begun developing AI curricular for school education frameworks Abuje (2024). There are numerous studies that have been done across the world on various aspects of rural marketing, AI and education, but none of these studies has brought together the concepts together. For instance, Kumar and Prashant, (2022), in their study of rural marketing in India, found that the media habits of rural consumers have a large influence on the effectiveness of rural marketing. However, the preferred mass media approaches, though cheaper, may not be effective due to lack of electricity and linguistic diversity. Their conclusion was that it is critical to understand the aspirations, fears, and hopes of rural customers in relation to each product category.

The study does not allude to the use of AI as an enabler of rural marketing practices, although our attention is drawn to the many challenges that rural communities, face, electricity connectivity. According to Maritz Africa Intelligence (2017), it is estimated that 60% of Africa's billion-plus population still live in the countryside. The group argues that rural markets offer companies a first-mover advantage and the chance to build consumer loyalty due to the lower penetration of brands. The case study given in this article is that of Equity Bank in Kenya, a bank that initially faced major challenges, and how it transformed itself into one of the largest banks in Kenya by focusing on rural areas which other commercial banks had hitherto not given a lot of attention as potential markets. NSEY (2025) Points out that in order to mitigate the potential risk associated with AI, top management in organizations must fully be involved in regulating its application in organizations, and should not just be left to the IT department and experts within the organization. Some of the risks include cyber security, inaccuracy, intellectual property infringement and regulatory compliance, and personal privacy. Organizations have begun to use AI in marketing and sales, though the extent of use vary from industry to industry. It is important to note that various forms of AI, for example generative AI can revolutionize content creation,

education, and even manufacturing by providing cost-effective and scalable solutions (Nugraha and Hermawan, 2024).

This is very essential among the rural communities, where cost effective approaches to all activities is key, considering the low income levels that are characteristic of the communities. Rural marketing practices involving the production, pricing, promotion and distribution of goods and services aimed at serving the needs and wants of mainly rural communities. The implications here is that even though a lot of products produced in the rural areas finds its way to the urban areas, the main focus for rural marketing is in serving rural communities.

Study Objective

The study sought to explore the role that Artificial Intelligence can play in supporting education to enhance rural marketing practices for transformative and sustainable development in Africa.

Theoretical Anchorage

This study was guided by Schumpeter's theory of innovation, and the Social theory of change. Schumpeter's theory of innovation views innovation as a dynamic process of industrial mutation that constantly revolutionizes the economic structure by destroying the old and creating the new, and by driving capitalist development through entrepreneurial activity. It was advanced by Joseph Schumpeter (1911, 1934) and is often referred to as "creative destruction. In the context of AI, the theory brings up the idea of replacing the old technologies with new ones, but most significantly, with an entrepreneurial motive. Rural marketing requires adoption of new skills and efficient techniques that will make them more competitive. The need to adopt AI techniques in the rural areas helps to bring about cost effective ways of service delivery. This can best be achieved through offering relevant education and learning

On the other hand, the theory of social change focuses on the desire by individuals or groups to change in the way they do things, driven by scarcity. Faced by scarcity of a challenge, individuals or organizations will always want to initiate change that can bring them to a more desirable state. Over the years, there have been many theorists, particularly sociologists, who have put in a lot of work in trying to explain what social change is and how it comes about. These theories all point to the fact change is necessary for any progress, and that change is triggered by necessity. Arguments about social change and how it occurs has been the subject of debate by sociologists throughout history, particularly from the 19th century.

The sociologists who included Karl Max, and Friedrich Engels (Who focused on evolutionary change), Emile Durkheim and Max Weber (who refuted the evolutionary theories and emphasized more static theories with division of labour as key). The theorists borrowed models of change from other disciplines like Biology and anthropology. In all the models, a dominant word seems to be about evolution and a shift from a less desirable to a more desirable state. Later day models of social change have focused on demographic forms of social change, such as population growth which may lead to competition for resources, conflicts, and so on), technological innovations and economic processes.

According to William Form and Noco Wilterdink (2024), Social change can evolve from various sources including contact with other societies (diffusion), changes in the ecosystem, interruptions of natural resources, changes in technology, population growth, economic and political movements. While the Research institutions concentrate on doing research in specialized areas, many universities devote over 60% of their time on teaching, with research being mainly concentrated on postgraduate studies where s the remaining 30% is left to research

Empirical Evidence

Kumar and Prashant (2022), in their study of rural marketing in India, found that the media habits of rural consumers have a large influence on the effectiveness of rural marketing. However, the preferred mass media approaches, though cheaper, may not be effective due to lack of electricity and linguistic diversity. Their conclusion was that it is critical to understand the aspirations, fears, and hopes of rural customers in relation to each product category. The study does not allude to the use of AI as an enabler of rural marketing practices,

although out attention is drawn to the many challenges that rural communities, face, electricity connectivity. According to Maritz Africa Intelligence (2017), it is estimated 60% of Africa's population still lives in the countryside. Maritz Africa Intelligence (2017) further argues that rural markets offer companies a first-mover advantage and the chance to build consumer loyalty due to the lower penetration of brands. The case study given in this article is that of Equity Bank in Kenya, a bank that initially faced major challenges, and how it transformed itself into one of the largest banks in Kenya by focusing on rural areas which other commercial banks had hitherto not given a lot of attention as potential markets. There are researchers that argue that AI is good and should be embraced by all. However, there are others that point at the many challenges that it has and should therefore be applied selectively.

Kumar and Srivastav (2025) found that AI offers quite a number of benefits to rural marketing, which include improvement in logistics by predicting demand patterns and optimizing transportation routes, ability for the firms to collect and analyze massive data sets about rural consumer behavior and facilitating secure, and user-friendly digital transactions that are needed for e-commerce and rural trade. However, the authors also found that implementation of AI in the rural areas faces certain challenges such as limited digital infrastructure and poor internet connectivity in remote areas, low digital literacy among rural populations and high implementation cost for small enterprises and local retailers. Language and cultural diversity in the rural areas also complicates AI system design. Likewise issue of Data privacy and ethical concerns related to consumer information collection also poses major challenges. These finds are not isolated to India alone and can be extended to other developing countries as well.

Rural marketing in South Africa requires a nuanced approach that understands the unique characteristics of the market, including limited access to digital media, traditional consumer preferences, and the importance of personal interaction. Magesa, Kisangiri, and Jesuk (2014) have identified poor access to markets by rural farmers in Tanzania was attributed to poor road infrastructure, lack of transporting means, and broadly by lack of agricultural market information. This scenario is replicated across most of the African Countries. They found that rural farmers depend heavily on the radio and mobile phones in accessing information. 83% of respondents indicated that they listen to the radio for getting different information including agricultural market information and 75.9% of respondents indicated that they depend of mobile phones.

Education is seen to be a major enabler of development and can greatly help to influence change in the rural areas. In the rural areas, literacy levels tend to be lower than those in the urban areas, and hence the need to bring about development in the rural areas. The support for rural marketing practices is important in bringing about development in the rural areas, and education can be a very crucial tool with the many challenges, AI can help to enhance communication.

Muindi and Aslam (2024) have discussed some of the Intelligent Tutoring Systems (ITS) that have been adopted in Kenyan Primary schools to try and support the education system in the primary schools, in which the pupil: teacher ratio has been reported as 70:1 (MOE, 2020) as opposed to the recommended ratio of 40:1. (Ministry of Education 2020). However, the widespread application of these systems especially in the rural areas remains low, considering the many challenges that rural areas face.

Mishra and Zaccaria and Israel (2024), have argued that there are numerous types of AI technology, each of which has stronger links with some sectors than others. As such, countries have different areas that given them competitive advantage, (e.g manufacturing), and it is these that each country should identify and tap into. They have argued that AI items like robot automation links well with sectors like manufacture of machinery and chemicals, while Image recognition and visual search works well with industries like food processing.

Several African countries have begun working on AI policies into their Strategic Plans, although only about 30% of countries have devised AI policies. The Kenyan AI Strategy (2025-2023) provides a clear roadmap on what Kenya needs to do to in order to harness the benefits of AI, and stresses that AI's impact extends far beyond the tech sector, and promises to revolutionize all the sectors of the economy, including agriculture, education, among others, and virtually every other aspect of our economy and society. The country can benefit from the immense potential that exists by adopting AI, but also focuses on artificial intelligence as a foundational emerging technology,

The rural marketing practice in developing countries tend to be simple relying with little mechanization. However, pockets of heavy commercial farming are now emerging in some parts of the world, and require research, and evidence based studies to be able to understand the best practices. The need to study and understand soil characteristics, diseases and disease control have gained prominence and these call for intelligence in order to quickly harness the information needed. A study by Price Waterhouse Coopers, (2017) projected that, by 2030, AI would contribute US\$15.7 trillion to the global economy by 2030. However, this contribution remains skewed more towards benefiting the developed as opposed to the developing economies, for the mere fact that many countries strong policy and legal frameworks to guide the adoption of AI in a way that the disruptions caused do not have major negative impacts that may outright the intended benefits. Adams (2022), has suggested some areas that African countries need to focus on in developing AI systems: Infrastructure Development, Regional Co-Operation Advancing African Value Systems and Principles in AI Ethics, and building Local Capacity and Skills. These measures can greatly enhance AI adoption.

Gina (2018) has discussed how new technologies are playing a growing role in defining market access and market practices in Sub Saharan Africa, especially in technologies ranging from mobile phones to Internet and web-enabled devices. Though Gina does not explicitly discuss the role of AI per se, new technologies are largely about Artificial intelligence. It is these technologies that can be of great use to the rural communities, and can aid marketing in the rural communities.

Olafare (2024) has argued that AI-driven educational technology provides highly personalized and adaptive learning experiences by analyzing student data and adjusting content. He goes on to assert that AI tools can streamline administrative tasks, such as grading, enabling educators to focus on teaching. Singh (2025) in their study suggested that AI provides more accurate and timely detection of herding behavior (tendency of people to move together towards a common direction) compared to traditional methods and thus offers significant implications for market stability and investor strategies. In dealing with AI, data protection is very important, yet in Africa, while there are 33 (61%) countries with data protection and privacy legislation, 6 (11%) countries have only a draft legislations, while 10(19%) countries have no legislation (NCTAD, 2023). The remaining 5 (9%) have no data.

METHODOLOGY

The study adopted a critical desktop document review focusing on relevant literature with specific anchorage in Schumpeter's theory of innovation, and the Social theory of change. More than sixteen journal articles were reviewed systematically and converge and divergence issues summarized under the findings section.

FINDINGS

The study finds that there have been attempts by governments in developing countries to come up with relevant policies and legal frameworks to assist in the implementation of AI practices. However, these policies have not given sufficient recognition to rural marketing, and basically talk generally about key sectors like agriculture and education. Whose agriculture are they talking about? Whose education are they talking about? Unless these issue is given special attention, the rural urban and poor vs the rich gap will continue to expand. There is no evidence that rural based marketing processes have well been captured by existing studies. The existing research evidence suggests that AI is an evolving technology that promises immense contribution to development, in all nations, but at the same time its application must be done with caution, taking care of any negative impacts.

The study found that use of AI can be instrumental in enhancing teaching and learning, automating administrative tasks, and promoting personalized learning experiences. In Kenya, the ministry of education has been working with tech organizations to build teacher capacity in using AI effectively in schools. However, this is yet to have a significant impact especially on rural marketing practices. There are numerous platforms that have been developed to aid AI education in Kenya, including Shule AI, which is an AI-powered platform that provides live streaming of classes and personalized learning experiences, Angaza Elimu, an ed-tech platform funded by UNICEF that uses AI to provide personalized learning content, M-Shule, an ed-tech platform that uses AI and SMS technology to deliver learning content to primary school students in remote areas, and Kytabu Africa system that uses AI to streamline operations and support for schools,

AI can significantly reduce the teacher shortage problem by having demonstrations done through AI supported tools. In fact, AI can reduce the demand for physical spaces as students can follow lessons from the comfort of their rooms, which is a critical issue in the learning process. However, research evidence also indicate that AI will increase unemployment and therefore reduce economic growth. This may require governments to find other activities that will occupy the people who may be rendered jobless by the increased use of AI tools. It is further argued that the AI tools may make students lazy in carrying analytical thinking as they will want to turn to AI for quick fixes and solutions. However, this has not been verified. It has been found that about 70% of the countries that have AI policies are in the developed world, meaning that only 30% of countries in the developing and least developed world have AI policies. This imbalance could increase the gap between the rich and the poor countries when it comes to AI application A report by the Centre for Intellectual Property and Information Technology Law (CIPIT) (2023) notes that with a few exceptions for countries such as South Africa, Nigeria, Ethiopia, Kenya, Zimbabwe, Togo, Libya and Ghana, AI applications have not yet been widely adopted throughout Africa. In fact, most African nations lack the necessary elements required for technology adoption in the form of infrastructure, data ecosystems, STEM education and governance systems. The report further reports that AI adoption in Africa suffers numerous challenges which include poorly done policy frameworks, ethical challenges, skills and capacity, and lack of a structured data ecosystem

DISCUSSION

From the foregoing, it is evident that a lot is being done by researchers as they carry out studies to understand various aspects of AI and its implications to both the developed as well as the low-resourced countries. The researchers seem to concentrate more on the role that AI can play in various sectors, but there is little emphasis on rural communities and how AI can accelerate development in those area. From the studies, it is also evident that AI adoption in developing countries remains a key focus area for sustainable development, yet it requires a lot of resources that governments may not be able to provide. AI is an evolving concept, and requires continuous research in order to understand its changing dynamics and adapt accordingly.

African countries have in the last decade been putting efforts to develop legal and regulatory frameworks to support AI adoption, but a lot more needs to be done if the continent is to benefit from the full potential of AI adoption. UNESCO, World Bank and other agencies have been supporting African countries to advance AI and other digital technologies, and it is expected that as the African countries continue to develop and launch relevant AI Strategies, they will get sufficient support to implement the strategies. For instance, Rwanda got support from cooperation agencies and international organizations such as GIZ FAIR Forward and the World Economic Forum, while Senegal was supported by African Union and Team Europe via the AU-EU Digital for Development (D4D) Hub. (ICT Works, 2024)

CONCUSSIONS

Coming up with relevant policy and legal frameworks that fully appreciate the role of rural communities is key in accelerating sustainable development. Over 60% of people in developing countries live in the country side, and it is important to appreciate the significant role that they play in supporting development of the countries. A lot has been done, but a lot more needs to be done to support the rural communities by coming up with relevant approaches that can be used to enhance learning and enhance rural marketing practices.

The study funds that there is sufficient evidence that African countries are beginning to get more involved in digital transformation initiatives, and are also ready to learn from one another (Senegal learnt a lot from Rwanda as they developed their AI Strategy (ICT Works, 2024)

RECOMMENDATIONS

There need to recast the policies and legal frameworks to lay emphasis on rural based marketing practices considering that marketing is the driver of all economic practices in the rural areas. This study recommends that more effort be made focusing on awareness creation about benefits and challenges associated with adoption of AI tools among the rural communities in Africa with a view to improving production and effective marketing in the rural areas.

Considering that many African governments have been receiving considerable support from external agencies in their development of AI legal frameworks, it is envisaged that the governments will take initiatives to commit more resources towards implementation of the strategies in order to achieve sustainable development

Suggestions for Further Research

This study has focused on desk top critical review of existing literature and empirical evidence, which lays ground for empirical studies focusing AI practices and extent to which AI tools are being applied to support learning in the rural areas in order to enhance rural marketing practices

Further studies could also focus on a comparative study of AI applications in rural and urban areas in Kenya

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