

# **Ethnographic Study to Understand the Culture of Technology Manufacturing in Ghana**

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## **Abstract**

Sub-Saharan African countries are characterized by low or absent technological growth. Scholars and the international community have endeavored to solve the long-standing problem, but none of these have produced the expected growth. While the rest of the world is advancing rapidly, Africa is noticeably lagging, even in comparison to other developing regions. It is apparent that previous international strategies cannot solve Africa's technological underdevelopment. This study argues that a solution to the problem depends on Africans, who must choose to want a solution and work towards it. An ethnographic study was therefore conducted to investigate the attitudes and worldview of the Ghanaian society towards technology underdevelopment. The study covers both the rural, traditional and urban, modern Ghana.

The study, among other things, revealed that the traditional sector is rich in inherited indigenous technology manufacturing, but the methods of production, and therefore, the technologies themselves, have been left undeveloped. The urban/rural divide inhibits positive cultural exchanges and knowledge sharing, thus, limiting the proliferation of indigenous technologies across the different cultures. Urban Ghana, where national policies are drawn, provides no framework for dialogue and participation for indigenous technology development.

*Keywords: Ghana, manufacturing of technology, technology development*

## **Introduction**

Since Ghana gained independence from Britain in 1957, successive government regimes and local businesses have endeavored to build an industrial base for national economic development and growth (Nkrumah, 1961; Kennedy, 1977). Those efforts were not successful despite the huge influx of capital-intensive investments, international aid, loans, and grants (Akubue, 2000; Lall & Pitrobelli, 2002; Aryeetey & Mensah, 2008). The persistent failures of the past cast doubt over the prospects of present and future efforts, as current efforts are still not based on a sound understanding of the Ghanaian people. For example, Ghana technology policy document that acknowledges the need to integrate development with the Ghanaian culture still focuses on the establishment of programmes and activities to develop technology that can compete with technology in the more industrialised West (MEST, 2010). When examining past failures and the basic technological needs of Ghana, it becomes apparent that modeling technological development on technological advances in the Western world may not benefit the local industries that sustain the Ghanaian economy.

This ethnographic study attempts to identify some of the factors that constrain technological development in developing countries. Using data from Ghana, the study will

extrapolate the outcome of future studies that may apply to the wider African region. The position of this study is that initiatives should re-focus from competing with the technologically advanced world towards developing technology for Ghana's national industries, so that businesses are assured of a firm technology base to support production. Ghanaians will seize the educational and job opportunities in expanded technological and engineering sectors and apply their education and skills to contribute meaningfully to national economic growth. According to Vergragt (2006), technology essentially involves the application of knowledge within cultural settings to address the material needs of the society. Therefore, technology should be specific to the culture it serves, even if it does not have a local origin.

### **Methodology**

The methodology adopted for this ethnographic study is to study selected areas of the Ghanaian culture to gain firsthand understanding of technological development. This is with the aim to identify and explain some of the factors that contribute to the present underdevelopment of technology in Ghana. The following section will present a brief narrative of the ethnography used in this study.

### **Ethnography**

Traditionally associated with cultural anthropology, the practice of ethnography requires the ethnographer to live among the population being studied, so that the ethnographer works with informants who are particularly knowledgeable in order to collect information (Bryman, 2012). Ethnographic fieldwork may last for extended periods of time, usually over a year, and sometimes much longer depending on the circumstances (Bryman, 2012), and other factors including communication issues between the ethnographer and informants (Appadurai, 1988).

As both a research methodology and a product of research (Marcus & Cushman, 1982), ethnography is difficult to define among scholars in various disciplines (Atkinson & Hammersley, 1994). Schensul (2005) summarises ethnography as research conducted in a natural setting, with intimate, face-to-face interaction between participants. However, emerging scrutiny among scholars of ethnography's traditional genre and procedural conventions demonstrates that Schensul's definition is oversimplified (Thomas, 1991). The progressing discourse, emerging from realist, postmodernist, and deconstructivist traditions, argues against the traditional branding of fieldwork as ethnography's most characterizing feature, arguing instead that ethnography and fieldwork are separable (Marcus & Cushman 1982; Sangren, 1988; Clifford, 1988; Thomas, 1991). Such arguments present ethnographic methodology as fluid and plastic, which could lead to the methodology's wider application beyond its traditional confines in anthropology (Wolcott, 1990). According to Atkinson and Hammersley (1994), definitions of ethnography stretch between two extremes points of view: those who view ethnography as a philosophical paradigm to which one makes a total commitment, and those who view ethnography as a method that one uses when appropriate. Marcus and Cushman (1982) demonstrate that the traditional presentation of ethnography is under fundamental revision, as influenced by the growing trend of epistemological

concerns. Cushman's work (1982) explores epistemological issues as an integral part of cultural analysis. Given these considerations, fieldwork remains distinctive of ethnography, as culture is studied and recorded through the firsthand accounts (Clifford, 1988; Wolcott, 1990). This is probably because the evidence I gathered is relayed by myself as a researcher. The ethnographer's role is to filter the accounts through his or her subjective experiences then represent the culture in an ostensibly objective point of view. What has been considered as "objective" is in fact contextual, and scholars argue that a people's culture is defined by the ethnographer (Sangren 1988). Due to ethnography's subjective nature, it requires cautious reporting.

### **Research Methods Employed**

The methods employed at the rural setting involved phenomenon observation and participant observation in addition to conversations, semi-structured interviews, and photography. The data collection focused on understanding how the rural community survives living away from modern amenities like running water, electricity, and transportation. In the urban settings, data collection involved meeting with professionals at government departments, institutions, and businesses. During the structured and semi-structured interviews, I used a digital voice recorder to record the interviews, which I later transcribed.

### **Summary Account of Ethnography in Ghana**

This subsection provides a brief account of the ethnography undertaken in Ghana. The fieldwork lasted two months, divided between two communities, one rural and one urban. Since I am Ghanaian, it could be argued that an ethnographic study was unnecessary, as I am already familiar with Ghanaian cultural tradition; however, it is extremely difficult to mitigate bias and conduct an independent study when the researcher is a member of the community under observation. In the effort to mitigate bias, in this case, I have attempted to take an outsider-observer's perspective. An outsider may find it easier to observe and identify the characteristics that answer the research intent. Being a Ghanaian, however, served as an advantage in certain cases, as I could more easily penetrate the rural communities; however, I did not receive that same reception from urban professionals. Clear social stratification existed within the rural communities; for example, the chief occupied the top of the hierarchy, and community members earned their position and respect by the size of their farm, number of cattle the family owned, and their and their families' general behaviour and conduct. The population comprised mainly children and the elderly. Most of the youth, without education or skills other than in agriculture, had emigrated into the towns and cities in search of better quality of life. As one of the community elders stated, "They [the young men] say they need job, they need to make money. We don't have any work here apart from farming, so they leave for the big towns."

The combined experience of the two rural-traditional and modernised communities provided useful experience for the research at hand. Data collected from professionals in the more modernised towns and cities provided perspective on the Ghanaian policy and development approach to technology. Interactions in both traditional and modernised social contexts provided

tangible bases for discussion to contribute to better understanding the research intent. The following section will present some salient findings from the fieldwork.

### **Results and Discussion**

From the narratives presented, I will attempt to uncover the Ghanaian perception towards the manufacturing of necessary technology. Policy issues, as understood through interviews taken in the cities with professionals, cast light on underdevelopment of technology in rural areas. The crude traditional production methods in the rural areas are not much different from those methods practiced in some individual homes in the cities; however, the cities dwellers have access to some modern amenities, such as electricity, tarred roads, and running water. The question becomes, how do city dwellers think differently from people in rural areas? While this question is difficult to answer directly, I observed that people, particularly from the second rural village, manufactured most of what the people needed, while the city dwellers purchase their goods from the market.

In the city, wealthier professionals seem to prefer technology imported from more industrialised nations (Kurzweil, 2007). However, technology is imported often without consideration of cultural variances between the country of export and the country of import (Hofstede 1984). As Ghanaian cities consume technology that the West produces, Ghana is denied the opportunity for technological growth from the technology available in the rural areas.

The study confirms the argument in existing literature that there is a clear divide between urban and the rural areas. As urban dwellers modernise, they align themselves with what could be considered a “Western” lifestyle. Young people from the impoverished rural areas migrate to urban areas, aspiring to a more modern lifestyle, which is one possible pull factor for urban migration, while older generations remain in their traditional rural home (Adepoju 2010). Sagasti (1992) describes a phenomenon he calls “cultural elongation,” when a previously colonised nation continues to follow its former coloniser’s patterns of administration, a process that promotes the agenda of imperialism, and as we’re now seeing, serves the global class system while ignoring indigenous, traditional cultural and economic systems, as in rural Ghana. As young people migrate to urban areas, traditional production methods are abandoned, which calls for concern. Ghana’s educational and research institutions almost solely support Westernised systems in their curricula, in another instance of “colonial elongation”. Often, traditional production technologies, which are mainly handcrafts, are not competitive on the global market, even though products such as textiles and shea butter are in demand globally.

One possible reason for colonial elongation is ethnic division, as each ethnic group defines its own geographic boundaries and orientation, creating a series of “mini-states”. This geographic and ethnic division came to light when I interacted in the two rural villages. The villages demonstrated strong internal bond within the communities, but distanced themselves from neighbouring tribes, even though one neighbouring tribe was the same, only at a different location. As a result of tribal divisions, each social group becomes too small to envision the need for more modern, enhanced methods of production. Small populations within tribes diminish demand, which would act as a catalyst to stimulate the community to higher production. Although one might

expect the Ghanaian government to operate above tribal divisions, so that the tribes have a point of unification, this was not the case. One respondent described how the Ghanaian population votes in its presidential election along tribal lines, an observation that calls for further investigation. Technological development must extend from Ghanaians, despite the extent of ethnic division.

How do Ghanaians see themselves with regards to technological development? I found that Ghanaians, both in rural and urban contexts, see themselves as technology users, but they understand themselves as having to rely on imported technology from the industrialised world, rather than making a national effort to develop technology manufacturing that coordinates with Ghanaian culture. This study found that Ghanaians consider themselves incapable of building their own technology base. I gathered this impression in semi-formal discussions held with Ghanaian engineering professionals working in academia and industry. They said that it is very difficult to access data as technology manufacturing is a guarded secret. Such a perception should however be counted as incorrect as artefacts found at the two villages were all manufactured by the locals with their crude technologies. Competition drives companies to guard technology manufacturing from others, even though the technological innovation is available and easily disseminated in this age of the Internet and information technology. Ghana needs to make the decision to develop technologically, and then set goals. The interviews suggest a Ghanaian attitude of looking internationally for solutions to its technological needs, which handicaps the development of Ghana's own technology industry. This assertion was derived from the interviews conducted with some respondents, as shown below.

In a conversation with a court judge on laws that promote manufacturing in Ghana, the judge responded:

Answer 10-3: Manufacturing needs the machines, but we do not have them; we would need investors to bring them into the country for the local manufacturing you are talking about to take place... I don't know of anything specifically for manufacturing or engineering. You see, it is when we have a case we research into the laws in that area. I haven't searched that line yet.

In a conversation with two customs officers about the kinds of imports into Ghana, they stated:

Answer 9-3: All kinds of machines, anything you can think of, from medical equipment to classroom teaching materials. We do not make anything in Ghana, you know. We import all our machines. I don't know what our universities are doing, our engineers can't do anything.

In a conversation with a director at a government ministry, when asked how the government promotes manufacturing, the respondent stated:

Answer 13-4: The emphasis here is to direct available funds to the agricultural sector... On the other hand if we get investors from the manufacturing sector, say, a manufacturing firm chooses to come and set up its manufacturing business here in Ghana, then that will help. Government is doing all it can to attract foreign investors into the country.

These responses from the professional group suggest a Ghanaian outlook that recognises the need for industrialisation for national economic growth, but lacks the confidence to develop a sustainable manufacturing base as the first step towards industrialisation. This may explain why the manufacturing sector records the lowest growth rate among all the sectors of the Ghanaian economy (Kolavali et al. 2011). No Ghanaian law could be found that makes provisions for manufacturing in the country, as came to light in an interview with a Driver and Vehicle Licensing Agency (DVLA) Regional Officer:

Question 8-1: What does your office require, as per the laws of Ghana, for an automobile to be deemed fit for registration?

Answer 8-1: When they bring in the car or any vehicle, we have a Customs Officer attached to this office, whose job is to verify that all the import duties have been paid. Based on the Customs' document, only can we commence the registration process to duly register a vehicle in Ghana.

Question 8-2: So does it mean that without the Customs' document of affirmation of import duties being paid, a vehicle cannot be registered?

Answer 8-2: No, if the car has no import papers to show, it can't be registered. By law, the Customs duty must be paid first.

The respondent suggested a contact with the Department for Customs who could clarify, and a visit to the Customs' Office confirmed the DVLA Regional Officer's statements. This suggests that there is no provision for technology manufacturing to take place in the country, as a car manufactured in Ghana cannot be registered.

Moreover, a shop owner revealed in a conversation that Ghanaians would prefer to use foreign products than buy locally made products. In conversation with a shop owner:

Question 16-2: Why do your customers prefer to use this U.S. made product instead of the locally available ones?

Answer 16-2: They complain about its natural odour, but it can be treated out. Don't mind them, that's not the reason; they just want to use something exotic. They think when they use a U.S. product, then they are getting part of the U.S. life, but they are only making the already rich Americans richer and we remain poorer.

The shop owner further stated that production in Ghana risked provoking anger among local politicians who are linked to foreign companies that monopolise the industry.

Question 16-3: But don't you also think that your customers want to use this U.S. product because it is better refined, but we don't produce such good qualities and varieties?

Answer 16-3: Even if you make it better locally, they will still want the U.S. brand. You don't know our people? If we want it, why don't we make it the way we want then? My young man, let me tell you the truth; it is very complex, it's not just what you see from the surface. Unfortunately, all these things have their politics as well. If you get into production, you will become a threat to the American company and they will work through your local politicians to stop you from taking away their market. I can't tell you all.

The shop owner's claims raise questions about the economic security of the nation as it appears to be controlled internally by international corporations. In an interview with a respondent working in a multinational company in Ghana, he stated that multinational companies use their monopoly of commodity production to stop the government from implementing any policy that will affect their profit margin. The companies directly control the government through threats to withdraw their products, the deprivation of which would make the politicians unpopular among the public. The government acquiesces to the companies' demands, so that it is unable to establish any control measures.

The respondent from the multinational company and shop owner's claims that foreign companies could sway local politicians to stop local businesses was very difficult to accept, until I met a young entrepreneur who had invested in the production of traditional soft drinks. This entrepreneur, who had no connection with the shop owner, provided strong grounds to attest the shop owner's claim. When speaking with this local drink producer about why he stopped production, he responded:

Answer 17-4: I think it was our fault; we went ...for certification. That was our mistake. The Officers told us to test the product on the market much longer to be sure of its success and return to them. Within that same week of our meeting them, they sent their taskforce to inspect all shops to remove all uncertified products. So they went and collected ours too...that is what has spoiled my business.

Upon further investigation of technology manufacturing, I deduced that qualified engineering and design staff was difficult to retain because of low patronage. Local businesses were not able to afford their fabricated machines and other products. The complex nature of this dynamic deserves much more analysis, in order to develop more appropriate channels, methods, and frameworks for technological development that is better integrated with Ghanaian culture.

### **Conclusion**

This ethnographic study of selected parts of rural and urban Ghana, undertaken in order to understand the country's social perception of technological development, attempts to better understand technological underdevelopment in Africa based on firsthand observation and accounts, rather than on speculation and assumption. My findings confirmed some of the existing theories for technological underdevelopment, especially of indigenous technologies, like ethnic divide and social seclusion. At the government policy level, technological development is not a major consideration, so much so that the law is used to limit promotion of manufacturing to discourage competition for imported technology. For example, only imported automobiles can be registered. With these findings in mind, this study concludes with a call for more consideration of manufacturing and indigenous technological development at the policy and educational levels, in order to create a future of hope for the coming generations.

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