Scholars Journal of Arts, Humanities and Social Sciences **ISSN 2347-5374(Online)**
Abbreviated Key Title: Sch. J. Arts Humanit. Soc. Sci. **ISSN 2347-9493(Print)**

(An International Publisher for Academic and Scientific Resources) DOI: 10.36347/sjahss.2018.v06i09.004

Psychological and Socio-Cultural Factors Influencing Blockchain Technology Adoption in Resolving Land Insecurity in Ghana

Emmanuel Demah*
Higher School of Economics National Research University, Moscow-Russia

***Corresponding author**
Emmanuel Demah

Article History
Received: 22.08.2018
Accepted: 03.09.2018
Published: 30.09.2018

Abstract: Ghana over the years has experienced insecurity of land tenure, land administration malpractices and lack of technological innovation to resolve these challenges. Land ownership and administration in Ghana is complicated due to individualistic, patrimonial and traditional ownership. This paper provides psychological and socio-cultural factors that thwart Ghana's effort towards technological adoption in relation to land insecurity. As a result, this paper proposed the adoption of blockchain technology incorporated into Ghana's land registry. The paper further established the strong basis that when blockchain technology is adopted, it would advantageously ensure the efficiency of land transactions, cost-effectiveness, transparent, security, enhance trust between parties involved, reduce land administration malpractices and to a large extent increase investment in Ghana. Furthermore, the paper explored that Ghanaians perception towards technology, group identity and multicultural innovation constitute psychological factors that inhibit technological adoption. Moreover, the short-term orientation of the Ghanaian society could be a strong socio-cultural hindrance to technological adoption. This paper concludes that leaders must be forward-looking and develop positive attitudes towards the acceptance of blockchain technology into Ghana's land registry.
Keywords: Blockchain Technology, Land Insecurity, Ghana, Labour Commission, Land Tenure, Land Registry.

INTRODUCTION

Ghana over the years has experienced challenges in relation to land insecurity. Institutional and machinery mechanisms provided by governments to resolve this problem marginally achieved their purpose. Also, the influx of time, rapid population growth, and complexity of governmental bodies created more land issues. For instance, the Land Administration Project (LAP) that was designed and implemented to solve land tenure insecurity by putting in place effective land administrative laws and policies has not adequately achieved its purpose [9]. Ehwi and Asante [1] observed that there is lack of coordination and disintegration among land sector agencies. Moreover, it became difficult for applicants with the aim of getting a title for their lands and deeds. The processes involved in obtaining a land title or deeds were not expeditiously done and prolonged the process from one to five years [1, 2].

As society evolves, little issues concerning technological advancement were addressed under the LAP. In this light, Ehwi and Asante [1] recommended that the Land Commission must be committed towards the digitization of land title registration processes. Although several studies have been conducted on land title registration, unravelling the antecedents of poor land administration and insecurity in Ghana, little has been done on innovational mechanisms that seek to resolve land security issues. This paper sought to provide a psychological and socio-cultural analysis that thwarts Ghana's effort towards the reduction of uncertainty in the land sector. This paper also sought to resolve the corruption practices such as multiple registrations of the same land and the indeterminate boundaries of land records based on the proposition of blockchain technology. This paper does not provide the technological (technical) processes involved in blockchain but only proposes the benefits or advantages involved in using blockchain technology when implemented.

Blockchain Technology

Blockchain technology has received wide attention among the digital research literature for the past few years. Even though blockchain has been angled to be beneficial to the financial sector, its usefulness is open to different sectors, industries and other agencies. Zheng, Xie, Dai and Wang [13] defined blockchain as a public ledger that stores all transactions in a chain of blocks. Blockchain technology was implemented in 2009 after it was first proposed in 2008 by Satoshi Nakamoto. Blockchain is a distributed ledger that has a list of transaction records in a sequence of blocks. According to Lemieux [8], blockchain technology is embedded with public keys as well as cryptographic

signatures with the provision of a long-lasting record of transactions in a chain which takes the form of a digital cash. Since it records transactions in a chain of blocks, each block has a hash value which is linked to the previous block called parent block. Blockchain technology is designed to validate transactions on a consensus basis and it is not owned or controlled by a single authority. Also, it is connected to a network of computers which is then viewed by all users. In view of the above, this paper further highlights the psychological and socio-cultural factors that thwarts the adoption of blockchain technology in the Ghanaian society.

Psychological Analysis

There are a number of psychological factors that affect the adoption of technology in the land sector of Ghana. One key factor that affects technological adoption is how people perceive the technology. Every innovation has its own pros and cons. However, how one perceives the pros and cons of the new technology has a significant influence on its acceptance or rejection. Interestingly, some Ghanaians are more construed to focus on the negative or risk aspects of blockchain technology than the positive aspects. The 2002 Nobel prize award winner Daniel Kahneman prospect theory [6] explained the use of heuristics or cognitive bias in decision making. Partly, this theory posits that people are much interested in the risks or negative consequences associated with technology when making decisions. Arguably, many people fail to cognitively glean adequate information on the positive and negative outcomes of new technologies. Hence, the result is that people react with negative affect towards the adoption of these new technologies thereby leading to rejection. As posited in the law of Amara, we tend to underestimate the effects of the new technology on a long-term basis and overestimate on a short-term basis [5]. This problem among some Ghanaians is conspicuously truncating national development. This paper provides a call for Ghanaian leaders and stakeholders in various land sector agencies to focus more on the long-term gains as they minimize the negative consequences of the technology.

Another psychological factor that affects technological adoption in Ghana is group identity. Tajfel and Turner [11] developed the social identity theory which posits that a person's sense of self is defined by the group membership. Moreoften, the group in which a person identify becomes a bottleneck for adapting to change. People always want to have control over the change process. Arguably, some leaders in various land sector agencies are surrounded by people who are not willing and sensitive to change. Ewhi and Asante [1] maintained that in the past six years, the LC has struggled to change the land processes from orthodox paper-based applications to digitized systems even though the necessary logistics were at their disposal. Hence, attitudes towards the group and technology have thwarted Ghana's efforts to change digitally and rendered a slower pace than expected. Leaders must surround themselves with people who are like-minded for change and development.

Again, multiculturalism has been argued as a great gain to countries that embraces diversity. Ghana is a multi-ethnic country but it has been trapped to avoid the practice of multicultural innovation. Hewlett, Melinda and Sherbin [3] emphatically said that creativity and innovation become the fruit of organizations that embrace diversity. However, Tajfel and Turner [11] postulated that in most circumstances, the ingroup discriminates against the outgroup in order to enhance and protect their self-image. To say the least, most officers who occupy various positions due to the fact that they hail from a particular ethnic group reject feasible and developmental ideas from people from other ethnic groups considered to be inferior.

Finally, people develop anxiety and fear for the adoption of new technologies. Calestous Juma, a professor at Harvard Kennedy School, addressing business students in Bentley University indicated that human beings by nature would most often resist novel things with the aim of protecting the self [4]. A typical example of this fear is technological unemployment which is the fear that the introduction of a new technology such as blockchain would affect their status and authority in society. The introduction of blockchain technology into the land registry would not render leaders and employers ("born before computer") unemployed but would rather change the composition of their jobs, hence the need for capacity building [1]. Although some fear is triggered when one attempt to adopt a new technology, people must make a conscious effort to adjust and change their world. This paper provides a call for Ghanaians to wake up and emphasize the importance of these innovations to resolve land insecurity in Ghana.

Socio-Cultural Analysis

Even though there is some psychological basis in which one may reject certain technologies, there exist also certain socio-cultural factors that inhibit the adoption of innovation in Ghana. Geert Hofstede, a renowned Cross-Cultural Psychologist's work on cultural dimensions have been mostly used to make reference to cultures that are innovative and otherwise. The cultural dimensions include power distance, uncertainty avoidance, masculinity, indulgence, individualism and longterm orientation. Empirically, Shane [10] findings showed that cultures that are highly individualistic such as Switzerland and the United States of America are more egalitarian and innovative. Considering these dimensions, this paper only explores the dimension relevant to Ghana. Based on Hofstede cultural dimensions of long-term orientation, Ghana averagely scoring four (4) indicates that we have short term orientation to life which depicts a normative

society (normative thinking) that honours traditions, norms and customs and perceives societal change with suspicion. With reference to land offices in Ghana, many of these offices have been occupied with a chunk of papers that serve as a means for fraudulent acts and insecurity of lands. There is the need to change our normative thinking patterns and instead appreciate technology that is transparent and trustworthy in providing long-lasting solutions to land controversies. The world is evolving and therefore various developing countries need to also evolve to meet the current demands of the society.

The Panacea

Another major concern of this paper is to create an awareness of blockchain technology and its relevance to the resolution of many controversies surrounding land security in Ghana. One important mechanism to solve this canker is forward-looking at the positive aspects of blockchain technology rather than the negative aspects. Blockchain technology provides stringent identification procedures such as biometric identification, multi-signatures and photos. People most especially less privileged in society who owns land would be in a comfort state devoid of worry when a property is being acquired.

Secondly, Ghanaians must develop positive attitudes towards the adoption of this technology. The development of positive attitudes towards blockchain technology would significantly propel people to focus on the potential benefits of this technology rather than the negative consequences. Furthermore, the adoption of blockchain technology is not to sweep away some of the practices and procedures spelt out in the Land Registry Act 1962 (Act 122) and Land Title Registration Law 1986 (PNDCL 152) but rather serve as a supplement to help solve the land issues in Ghana. However, this paper suggests that the land registry and title registration laws should be adapted to the new technology in order to facilitate the resolution of land controversies.

Again, blockchain technology would serve as an inclusive technology that gives the opportunity to the core poor in society. According to Sarpong [9], the marginalized, poor and vulnerable people are less privileged to gain access and protect their lands, hence this technology would serve as an instrument that protects the resources they own. This is because blockchain provides a transparent, secure ledger that would manage land titles for both the haves and have not. Moreover, with blockchain features such as audibility which verifies the land owner would secure land titles, avoid unprecedented land encraochments and keep lasting records.

CONCLUSION

This paper provided a comprehensive overview of the major challenges associated with land insecurity and suggested strong grounds for the adoption of blockchain technology as the panacea. The psychological and socio-cultural factors that hinder the adoption of blockchain technology has been highlighted. The paper further explained that once blockchain technology is adopted, about 95% of property fees such as land registration fees would be reduced and therefore increase transparency in land ownership, and reduce the fraudulent practices. Blockchain would also facilitate the achievement of LAP long-term goals of improving the security of land tenure and fostering prudential strategies in the management of land practices, reduce poverty and enhance socio-economic growth in Ghana [7]. Lemieux [8] asserted that one kind of technology that has been proposed to solve all record system problems especially digital records is the blockchain technology. Zheng *et al*. [13] concur that blockchain technology would facilitate the efficiency of transactions as well as save cost. Underwood [12] also pointed out that blockchain technology provides transparent transactions, enforce security and apparently foster trust. She further noted that people in the developing countries could be empowered in terms of asset ownership when blockchain technology is adopted and implemented. Blockchain technology is also relevent not only at the individual level but also at the natinoal level. Security of land tenures has been argued to reduce poverty and improve economic growth [8] and land acquisition malpractices in general.

Consequently, the adoption of blockchain technology would ensure social stability, equal distribution of land and ultimately increase investment in the country. Sarpong [9] maintained that issues relating to land tenure play a significant role in improving technological change, achieving sustainable rural development as well as attaining economic integration. Moreover, Ghanaians would develop trust for their government if land records are well managed on a long-term basis [8].

ACKNOWLEDGEMENTS

I thank Dr Olga Abramova for her thoughtful comments towards this paper. I also thank the reviewers whose comments made this paper a fully established one.

REFERENCES

1. Ehwi RJ, Asante LA. Ex-post analysis of land title registration in Ghana since 2008 merger: Accra lands commission in perspective. Sage Open. 2016 Apr 28;6(2):2158244016643351.
2. Gambrah A. Improving Land Transfer Procedures in Ghana. Journal of Science and Technology (Ghana). 2002;22(1): 22-33.
3. Hewlett SA, Marshall M, Sherbin L. How Diversity Can Drive Innovation. [document on the internet]. Harvard Business Review; [issued 2013 Dec; cited on 2018 June 2]. Available from:

https://hbr.org/2013/12/how-diversity-can-drive-innovation.

4. Howarth J. Here's Why People Resist New Technologies. [document on the internet]. Bentley University; [updated 2017 Nov 20; cited 2018 May 15]. Available from: https://www.bentley.edu/prepared/here-s-why-people-resist-new-technologies.
5. Juma C. Innovation and its enemies: Why people resist new technologies. Oxford University Press. 2016 Jun 6.
6. Kahneman D. Prospect theory: An analysis of decisions under risk. Econometrica. 1979;47:278.
7. Larbi WO. Compulsory land acquisition and compensation in Ghana: Searching for alternative policies and strategies. InPresentation, FIG/FAO/CNG International Seminar on State and Public Sector Land Management, Verona, Italy. http://www. fao. org/3/ai0899t/i0899t02. pdf 2008 Sep 9.
8. Lemieux VL. Trusting records: is Blockchain technology the answer?. Records Management Journal. 2016 Jul 18;26(2):110-39.
9. Sarpong GA. Improving tenure security for the rural poor. Ghana–Country case study. Rome: Food and Agricultural Organization. 2006.
10. Shane SA. Why do some societies invent more than others?. Journal of Business Venturing. 1992 Jan 1;7(1):29-46.
11. Tajfel H, Turner JC. An integrative theory of intergroup conflict. The social psychology of intergroup relations. 1979;33(47):74.
12. Underwood S. Blockchain beyond bitcoin. Communications of the ACM. 2016 Oct 28;59(11):15-7.
13. Zheng Z, Xie S, Dai HN, Wang H. Blockchain challenges and opportunities: A survey. Work Pap.–2016. 2016.