Volume 27 Issue 1
October 2020
ISSN 2458-7435 (ONLINE)

AFRICAN JOURNAL OF MANAGEMENT RESEARCH

Published by

UNIVERSITY OF GHANA

UGBS BUSINESS SCHOOL

African Journal of Management Research (AJMR)

Publisher Details
University of Ghana Business School,
University of Ghana

ISSN: 2458 – 7435 (ONLINE)

Subscriptions & Requests for Advertising
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This Journal aims to publish original research and provide a forum for critical conceptual and analytical debate which extend the bounds of knowledge in and about business and organisational functionality in Africa. This does not preclude consideration of papers from other parts of the world. This journal will typically have the following content: Editorial, Peer-reviewed papers and cases, practitioner view-point papers and book reviews.

Submissions
Papers should be submitted by both email and online.

Email: aaboagye@ug.edu.gh; ajmr@ug.edu.gh
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African Journal of Management Research (AJMR)

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Content

Editorial

I am happy to welcome you to Volume 27 issue 1 of the *African Journal of Management Research*. We apologise for falling a little behind schedule. But to compensate our readers, we shall soon be out with Volume 27 issue 2. As in the past, this issue consists of original research within the context of Africa, which without doubt differs from other continents.

Four of the nine articles that make up this issue research into matters relating to banking in Ghana. In particular, the crisis that the banking industry went through publicly from the middle of 2017 to the middle of 2019, but whose seeds had been sown earlier than 2017. One article investigates the influence of the entry of foreign banks on the efficiency and stability of the Ghanaian banking system.

The other articles investigate the savings and investment behaviour of young adults, regime switching in sub-Saharan frontier equity markets, development infancy of industries in Nigeria, road pricing as a solution to traffic congestion and succession planning in Ghanaian firms.

I wish you happy reading and please stay tuned for more interesting research finding in subsequent volumes and issues.

Ghanaian Banking Crisis of 2017-2019 and Related Party Transactions

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Abstract

Early in 2017, a new management team took over the helm of affairs at the central bank of Ghana. Preliminary evidence available to them suggested that a number of banks were distressed. Further investigation by them revealed that poor corporate governance, false financial reporting, and insider dealings were major contributory factors to the poor state of affairs that they found. The central bank then engaged the banks in question to try to rectify the situation. Unfortunately, things did not work out. Subsequently, over the course of sixteen-months, the banking licenses of nine banks out of 35 were withdrawn. This paper focuses on the role insider and related party transactions (RPTs) played in what has been referred to as Ghana's banking crisis and presents details of the extent to which affected banks engaged in RPTs, possibly in a quest to seek rents. Content analysis of the central banks allegations against affected banks suggests that being members of conglomerate groups pre-disposed banks to rent-seeking related party transactions. To forestall such activities, it is recommended that banks should not be allowed to belong to conglomerate groups. Also, entities with controlling interests in non-regulated firms should not be allowed to gain controlling interests in banks. Further, the central bank should be extra vigilant in carrying out its risk-based supervisory responsibilities. Finally, Ghana should consider adopting the twin peaks approach to regulating her financial system.

Introduction

In 2015, the central bank of Ghana, called the Bank of Ghana, undertook an exercise to review the quality of the assets of banks. It produced a report titled, *The Asset Quality Review (AQR) of Banks*. The Bank of Ghana updated the 2015 report with 2016 data. The reports pointed to 10 banks being undercapitalized. Subsequently, the central bank engaged the banks in question to try to address concerns unearthed by the

https://dx.doi.org/10.4314/ajmr.v27i1.1

2015 and 2016 reports. On January 4, 2019, the Governor of the central bank declared:

… In short, the financial system had reached a tipping point and we could not have assumed business as usual. The Bank of Ghana, therefore, embarked on a comprehensive reform agenda, with the objective of cleaning up the sector and strengthening the regulatory and supervisory framework for a more resilient banking sector.

… Ladies and gentlemen, it has been an eventful last twenty months during which the Bank of Ghana has had to take tough but necessary bold steps to clean up the banking sector and to reposition it to support the economic growth and transformation agenda for Ghana.

Here is a summary of the outcomes of the engagements and decisions taken over period 2017-2019.

The Case Against Affected Banks

Following are the summaries of the matters raised by the Bank of Ghana against the 10 banks for which their banking licenses were withdrawn.

UT Bank Limited and Capital Bank Limited

On August 14, 2017, the Bank of Ghana revoked the banking licenses of UT Bank Limited and Capital Bank Limited on account of "severe impairment" of their equity capital. The central bank approved a "Purchase and Assumption transaction" that transferred all deposits and selected assets of UT Bank and Capital Bank to GCB Bank Limited.

At the Annual Dinner of the Chartered Institute of Bankers Ghana on December 2, 2017, the Governor of the Bank of Ghana gave insight into specific offences that led to the revocation of the banking licenses of the two banks. The reasons include, Graphic Online (2017):

- non-separation of the activities of the banks from those of their holding companies;
- excessively high executive compensation schemes which were out of tune with the results the banks were achieving;
- acceptance of gifts from the bank by non-executive directors of the banks which compromised their independence and their ability to perform their fiduciary duties as checks on executive directors;
- some non-executive members of the boards of directors of the two banks had put themselves in conflict of interest situations by acting as consultants to the banks on whose boards they sat;
- the banks did not adhere to credit management principles and procedures. The banks were heavily exposed to insiders and related parties with no evidence that interest was being paid on those loans;
- funds of the banks were diverted to holding companies of the conglomerate groups to which they belonged leading to illiquidity;
- board meetings were irregular resulting in weak board oversight; and
- the banks borrowed heavily from high net worth individuals at very high cost.

uniBank (Ghana) Limited

On 20th March 2018, the Bank of Ghana (BoG) appointed KPMG Ghana as Official Administrator of uniBank

(Ghana) Limited, effective that date, KPMG was to run all aspects of the business of the bank and in the process ascertain the true financial condition of the bank.

Some four months later, BoG declared that effective August 1, 2018, it was revoking the banking license of uniBank based on the report BoG had received from the Official Administrator who had concluded that uniBank was insolvent and that its operations were unsustainable. Providing evidence, the Administrator indicated that it had concluded that:

- uniBank's interest income and other income were less than the bank's cost of funds (loans and other liabilities) and its overhead expenses;
- the bank's loan portfolio was non-performing;
- the bank's internal control systems were weak. Significant deficiencies existed in credit underwriting, loan approval, compliance and reporting processes;
- significant deficiencies also existed in the bank's corporate governance, risk management, compliance and management;
- unlawful transactions involving shareholders and related parties were engaged in.

Royal Bank Limited

On the same date, August 1, 2018, the banking license of The Royal Bank Limited was also withdrawn on grounds that it was insolvent and faced acute liquidity challenges. The bank's insolvency was attributed to:

- under-provisioning for loans;
- over estimation of investment assets;
- rejection by the central bank of certain fixed assets presented by The Royal Bank for capital purposes;
- non-performing loans - 78.9% of total loans were non-performing;
- poor credit risk management;
- poor liquidity risk management; and
- weak corporate governance systems.

The BoG also said the capital position of the bank had been overstated in order to create appearance of compliance with capital adequacy laws. Citing other wrongdoing, the central bank said transactions worth USD 33 million (GHS161.92 million) were entered into with shareholders and related and connected parties and were structured to circumvent rules that limit exposure to individual entities.

The Beige Bank Limited

Another affected bank was The Beige Bank Limited. The BoG's August 1, 2018 statement declared that a special examination it conducted into the affairs of the bank six months after the bank commenced operations in December 2017 revealed that the bank was insolvent. The bank's capital adequacy ratio was negative 17.18%, against the legal minimum of positive 10%.

The following infractions were documented:

- the supposed additional financial injection into the bank by its parent company soon after the bank received its temporary license were Beige Bank's own funds that an affiliate company of Beige Bank had sourced from Beige Bank and passed these on to their parent in violation of the law. The amount involved was Beige Bank's USD 33.5 million (GHS 163.47 million) that it had placed as investment with an affiliate company that was an asset management company;

- the bank had "persistently breached the cash reserve requirement of 10%" since January 2018;
- 72.8% of the bank's loan portfolio was non-performing.

Sovereign Bank Limited

The BoG's August 1, 2018 statement indicated that this bank's capital had been wiped out (insolvent) on account of the following:

- funds provided as initial capital of the Sovereign bank by its founding shareholders in January 2016 did not belong to them. The BoG traced these funds back to Capital Bank Limited, whose licensed had been revoked a year earlier. After presenting these funds to obtain its banking license, Sovereign bank then placed a chunk of its capital with another financial institution as investment in that financial institution. Investigations showed that these investments were subsequently liquidated by the shareholders of Sovereign bank and parties related to them;
- the bank's loan portfolio was non-performing;
- the bank had become illiquid by August 1, 2018; and
- the bank was guilty of persistent breaches of key regulatory requirements and prudential limits.

Construction Bank Limited

The August 1, 2018 statement also announced withdrawal of the banking license of Construction Bank Limited. Construction Bank was licensed in May 2017. The Bank of Ghana reported that, while it was working with KPMG as the Official Administrator of uniBank, the BoG discovered the following:

- the initial minimum paid-up capital provided by the promoter/shareholder of Construction Bank was made up of a USD 7 million (GHS 34 million) loan obtained from NIB Bank Limited and another to the tune of USD 12.5 million (GHS 61 million) obtained from uniBank in contravention of Act 930;
- Construction Bank could not access USD 16.4 million (GHS 80 million) out of the amount the bank reported as its paid-up capital which it had invested with both NIB Bank Limited and uniBank;
- the bank could not inject additional funds to restore its minimum capital to the required USD 25 million (GHS 120 million). This inability threatened the safety of depositors' funds and the stability of the banking system;
- the promoter/shareholder could also not submit a credible plan for recapitalizing the bank's capital to the required minimum at the time of its licensing.

Premium Bank Limited

On January 4, 2019, the BoG announced revocation of the banking license of Premium Bank Limited. Premium Bank had become insolvent effective November 30, 2018, with a capital adequacy ratio of negative 125.26%, BoG announced. The following infractions were reported:

- BoG investigations revealed that initial funds contributed by shareholders as capital were borrowed funds, which loan was repaid soon after the bank received its banking license, hence the capital was not available for Premium Bank to work with;

- as at November 2018, 37.2% of the bank's loans, had been granted to related parties. These loans were more than the bank's equity, which is in breach of the regulatory limit of 10% of equity;
- outstanding loans to related parties were wrongly classified by the bank as "investments";
- the bank had also submitted inaccurate prudential returns to the central bank;
- finally, the bank could not post the new minimum required capital of USD 80 million (GHS 400 million) that was required of universal banks by January 1, 2019.

Heritage Bank

On January 4, 2019, the central bank also announced revocation of the banking license of Heritage Bank Ghana Limited (which was issued to it on October 4, 2016) on grounds that:

- it had obtained its banking license on the basis of capital with questionable sources. Section 9 (d) of the *Banks and Specialised Deposit-Taking Institutions Act, 2016 (Act 930)* and Section 1 of the *Anti-Money Laundering Act of 2008 (Act 749)* require acceptable capital to be obtained from lawful and transparent sources;
- it was unable to meet the new minimum capital requirement (USD 80 million) that became effective January 1, 2019;
- the main shareholder of the bank did not meet the "fit and proper" test for owning a bank.

GN Bank Limited

The January 4, 2019 statement also dealt with the case of GN Bank Limited. GN Bank was unable to meet the new minimum capital of USD 80 million that became effective January 1, 2019. As a result, it applied for, and was approved for a license to operate as a savings and loans company to be called GN Savings and Loans, (lower capital requirement) and was given time to strip itself off businesses not compatible with a savings and loans company and to inject additional capital. It had up to June 30, 2019 to do this.

On August 16, 2019, the Bank of Ghana revoked the savings and loans license of GN Bank on the grounds of not meeting key prudential regulatory requirements (consistent with its new status) and that GN was insolvent.

Among other causes, the central bank traced GN's insolvency problems to

- overdraft and other credit facilities it had extended to its related parties under circumstances that violated relevant prudential rules;
- these related parties were not able to honour their obligations to GN Savings and Loans.

Common Trends

Ultimately, the banking licenses were revoked because shareholders did not have the minimum capital that was required to operate as universal banks. Of the ten banks discussed above, only two, Construction Bank and Heritage Bank, were not accused directly of undertaking illegal "related party transactions", "connected parties transactions", transactions involving "shareholders", "parent companies" or "affiliate companies". Taking a cue from this observation as some indication that unwholesome related party transactions may be rife in the industry, this study presents an overview of this concept in the literature, then provides international evidence of related party transactions that amounted to rent-seeking behaviour. It then does a content analysis of BoG statements to highlight the extent to which affected banks fell foul of good bank management practices. Findings of content analysis are then discussed in the context of the literature on avoiding or reducing rent-seeking behavior by financial institutions and ends with concluding remarks on financial regulation in Ghana.

Literature Review

Conglomerates and Related Party Transactions

A business conglomerate is a collection of businesses in unrelated businesses controlled by one company. A financial conglomerate is one whose members are all financial services providers and hence are regulated by one regulator or the other. Conglomerates in the United States or other Western countries consist of a single holding company with multiple subsidiaries engaged in different businesses. In Japan, the *keiretsu* model is analysed as a conglomerate. It is a loosely organized alliance of businesses that extends to the social life of Japanese. Alliance members own portions of the shares of other members. The alliance is formed around a core bank. Chinese conglomerates tend to be state-owned enterprises, while South Korean conglomerates, called *chaebol*, are owned and operated by families. Well known conglomerates exist in Indian too. They include the Tata Group and the Mahindra Group.

The literature (see for example, Kawai, 2009) notes that conglomerate membership, especially as obtains in Japan, helps insulate members from stock market fluctuations and takeover attempts, and enhances plans to work on long-term projects. Such a system also helps lower transaction costs such as coordinating costs, searching costs and switching costs. It also helps reduce the risk that counter parties may not abide by contracts, and helps in testing of product quality under non-market conditions. Another often touted advantage of membership of a conglomerate is that some members may provide capital (or other funds or services) to other members below market rates. In situations where external capital markets are not developed enough, internal capital allocation by members of the conglomerate to other members can be an effective way for cash needy members of conglomerates to access capital, it is argued. It should however be noted that finance theory preaches optimal allocation of resources. Allocation to "friends and family" may not be optimal.

It is also argued that, for the firm controlling the conglomerate, diversification of its investments into many conglomerate members results in reduction of unsystematic risk. This advantage is often enhanced if the group is made up of entities with different business cycles.

Here too, finance theory notes that investors interested in holding diversified portfolios should not focus on holding companies. Investors may be better off constructing their own diversified portfolios by buying shares of standalone companies that operate in the lines of business of members of the conglomerate of interest on the following grounds. For one thing, beyond the management of the individual members of the conglomerate, existence of the controlling entity translates to another layer of management, which increases cost over and above what an equivalent standalone firm would bear, all things equal. Another disadvantage is difficulty in assessing the performance of individual members of the conglomerate. Accounting disclosures made at the group level may be less informative for analysis since accounting data are grouped. As a result, the true picture of individual performance may not emerge.

Akerlof and Romer (1993) noted that efficient financial markets, noting these disadvantages, mark down the value of conglomerates relative to a portfolio of standalone firms. Thus, conglomerates are often worth less than the sum of their parts in efficient markets. Also, lack of equal focus on all members of a conglomerate at the parent holding company level, and possible lack of capacity to manage unrelated businesses equally well is another disadvantage of conglomerates. Another disadvantage is potential culture clashes between different members of the conglomerates that can destroy value. Still another is inertia or waiting for the right signals from parents, which can interfere with development of innovation at the affiliate.

Related Parties and Rent-Seeking Behaviour

In speaking about conglomerates, finance literature uses the term *related parties* frequently.

International Financial Reporting Standards (IFRS, 2020) refers to related parties as:

a) *A person or a close member of that person's family is related to a reporting entity if that person has control, joint control, or significant influence over the entity or is a member of its key management personnel; or*
b) *An entity is related to a reporting entity if, among other circumstances, it is a parent, subsidiary, fellow subsidiary, associate, or joint venture of the reporting entity, or it is controlled, jointly controlled, or significantly influenced or managed by a person who is a related party.*

IFRS defines related party transaction

> … *as a transfer of economic resources or obligations between related parties, or the provision of services by one party to a related party, regardless of whether any consideration is exchanged. The parties to the transaction are related prior to the transaction.*

To explain why related party transactions and conglomerate/affiliate transactions can be problematic, we turn to the literature on *rent-seeking behavior*.

Rent-Seeking

The term rent-seeking too has been given a number of definitions in the literature. Corporate Finance Institute (2015) defines the phrase as, *an individual or an entity seeking to increase their own wealth without creating any benefits or wealth to the society.* Fischer (2005) says, R*ent-seeking describes the ability to capture incomes without producing output or making a productive contribution*.

In the main, rent-seeking activities are geared at obtaining financial gains or other benefits by influencing distribution, rather than production, of economic resources. For example, a conglomerate holding company may use its own equity as seed money to establish a number of independently incorporated subsidiaries, then find ways to attract others to become equity holders in these subsidiaries, which subsidiary may then borrow funds. Properly structured, the holding company would now be controlling much larger subsidiaries than its own equity could have established. That is not all. The holding company may then encourage transfer pricing among subsidiaries. Being itself located in a low tax jurisdiction, it gets to keep much of the profits of the conglomerate group. This would amount to rent-seeking behaviour.

Fischer (2005) argues that rent-seeking discourages innovation in revenue enhancement, cost reduction, technology improvement, etc. and instead relies on "connections" for redistribution of economic resources to the firm for increase in wealth. And continues that, such practices result in reduction in overall economic efficiency. Rent-seeking behaviour results in loss of government revenues, decrease in competition and rise in income inequality. Sorkin (2009) argues that, the too-big-to-fail syndrome is a rent-seeking attitude, and was one reason why many large United States financial institutions took on excessive risks that resulted in the 2007-2009 global financial crisis.

Related Parties in Banking

Two views on related party transactions (RPT) have emerged in the banking literature. One view, often called *information view of RPTs*, hypothesizes that close relationships between banks and customers, especially borrowers makes for close monitoring of customers (and monitoring of insiders by insiders), reduces risk and facilitates the flow of funds among group members, especially when cost of information is high and contract enforcement costs are also high. See for example, Lamoreaux (1994).

The alternate view of RPT is the *looting view* (also called *tunneling view*). It hypothesizes that close relationship between banks and borrowers allows insiders to divert resources from depositors or minority shareholders to insiders, (Akerlof and Romer, 1993, Johnson *et al.* 2000). Morck and Nakamura (1999) and Kang and Stulz (1997) hypothesize this view as a benefit of keiretsu groups in Japan.

Explaining how the looting works, proponents argue that when a banking system has deposit insurance, managers of banks can take excessive risk or make loans to their own companies on softer than market terms and suffer little or no consequences if these loans fail. Alternatively, even if the banking system did not have deposit insurance, bank managers have incentive to divert bank funds by making loans on softer than market terms to firms in which their share of earnings is greater than their share of profits in the bank. Akerlof and Romer (1993) showed that looting is likely when it is anticipated that the future prospects of gaining from the company are less than what the owners can loot now. They further note that during periods of financial distress, bank insiders use their control over lending policies to loot banks. That is, siphon out bank resources by making loans that the banks credit policy would not ordinarily support.

However, these days in Europe and the United States, conglomerates are increasingly being viewed as heavy-footed, unfocused, and inefficient and are losing their shine with investors. For example, General Electric of the US was dropped from the Dow Jones Industrial Average in 2018 because of falling value (having been weighed down, in part, by losses at its financial services unit).

Tripathi et al. (2019) however, believe that in emerging markets with weak competition and scarce capital, conglomerates which have a sharper focus and a well-defined strategic identity are well placed to be profitable. Challenges they face these days include gradual opening of their home markets to foreign investors resulting in increased competition. Also, capital is becoming more available in developing countries for standalone local firms to access, hence they too add to the competition that conglomerates now face.

International Evidence on Rent-Seeking and Related Party Transactions

La Porta et al. (2003) state that, in the main, rent-seeking is more prevalent in environments in which institutions are weak, which is typical of developing economies. However, they emphasize that rent-seeking does exist in developed economies too. For example, when lobbyists in the United States lobby governments to tilt financial rules in their favour, they are rent-seeking.

Schwab and Werker (2018) argue that in manufacturing, rent-seeking lowers productivity growth especially in poor countries with weak institutions. Overall, they conclude that rent-seeking is not good for business. Here are some country studies.

India

Bertrand et al. (2002) provide evidence of significant funneling (tunneling) of resources into and out of Indian business conglomerates. Controlling interests funnel out resources from businesses in which their share of profits is lower to businesses in which their share of profits is higher. Fewer resources are funneled out of family-owned conglomerates than non-family owned conglomerates. They argued that stock markets incorporate expectation of the impact funneling of resources into or out of members of a conglomerate when they value them. Firms that are at the receiving end of funneling of conglomerate resources are valued more. The same holds for those from whom less funds are tunneled away.

Mexico

La Porta et al. (2003) provide evidence that “supports the view that in some important settings related lending is a manifestation of looting” in Mexico. A study of 17 banks in the mid 1990s revealed that 20% of commercial lending by the banks is to related parties and that related party lending takes place on better terms than arm's-length lending (annual interest rates are 4 percentage points lower); related party loans are 33 percent more likely to default; and recovery rates on defaulted related party loans are 30 percent less than loans to unrelated parties.

Pakistan

Khwaja and Mian (2005) estimated that for Pakistan, between 1996 and 2003, politically connected agents had more access to credit from government banks at lower cost than firms without political connections. They also estimated economy-wide costs of rents to be 0.3 to 1.9 percent of GDP annually over the period.

Argentina

Hertzberg at al. (2010) found that among Argentinian banks, rotation of loan officers improved the accuracy of reports that loan officers wrote because such officers would rather they reported the true situation of a loan themselves than for that to be exposed by a succeeding loan officer. Khwaja and Mian, (2011) argue that lack of more effort to report more accurately the true status of a loan in the absence of rotation amounts to rent-seeking because such officers do not directly bear the cost of bad loans.

Jamaica

For Jamaica, Tennant (2013) finds evidence that "looting and information-based motivations distinctly and separately impact" related party transactions. Related party loans are influenced heavily by motivations to loot, while investments in related parties are influenced by information efficiencies (making the most use of limited information).

Bank Regulation in Ghana and Related Banking

The *Bank of Ghana Act 2002, (Act 612)* and *Bank of Ghana (Amendment) Act, 2016 (Act 918)* establish the Bank of Ghana as the central bank of Ghana and gives it overall supervisory and regulatory authority in all matters relating to banking in order to achieve a "sound, efficient banking system in the interest of depositors and other customers" and of the whole economy.

The *Banks and Specialised Deposit-Taking Institutions Act, 2016 (Act 930)* is the primary law that governs commercial banking in Ghana. It regulates institutions which take deposits and grant loans. Act 930 gives the Bank of Ghana authority to issue periodic *Bank of Ghana Notices/Directives/Circulars/Regulations* to banks and other entities it regulates.

The Bank of Ghana's (2018) definition of *related party* in respect of entities it regulates states that *related party* in relation to business transactions means a company/ entity in which

a) *The Regulated Financial Institution or any of its Directors or Key Management Personnel have equity interest of at least 5%;*
b) *A director(s) of the Regulated Financial Institution also serves as a director(s) of the company/entity;*
c) *A director or Key Management Personnel of the Regulated Financial Institution has influence in the company/entity.*

Bank of Ghana's (2018) directive to regulated financial institutions in respect of related parties states that

> *The Board shall ensure that transactions with related parties (including internal group transactions) are reviewed to assess risk and are subject to appropriate restrictions (e.g., by requiring that such transactions be conducted on non-preferential terms/basis) and applicable legislation and other requirements such as those prescribed under sections 67 to 70 of Act 930 regarding exposure limits for loans to related parties and staff.*

Relevant Provisions in Act 930

The Act contains elaborate provisions on the regulation of what the Act calls *corporate conglomerates*. Two sections are worthy of note.

<u>*Ownership and Control*</u>

- Section 42 envisages that a bank or specialised deposit-taking institution may be a member of *a corporate group*;
- Section 43 envisages that [corporate] persons must register as *financial holding companies* (presumably as head of a corporate group) and receive approval before functioning as such;
- Section 46 details activities that financial holding companies may or may not engage in;
- Section 47 speaks to the power of the Bank of Ghana to require restructuring of ownership or structure of the conglomerate. For example, if the Bank of Ghana determines that current ownership/ structures hinders effective supervision of the regulated entity; and
- Section 48 speaks to conditions under which withdrawal of registration as a financial holding company by Bank of Ghana may be effected.

<u>*Restrictions on Lending and Investments*</u>

- Sections 61, 62, 63, 64, 65, 66 impose limits on financial exposure and dealings with affiliates;
- Sections 67, 68, 69, 70, 71, 72 put restrictions on financial exposures to insiders, related parties and staff;
- Section 73 limits investment by banks or specialised deposit-taking institutions in respect of *non-subsidiary* institutions;
- Section 102 speaks to remedial measures that the Bank of Ghana may take against banks, specialised deposit-taking institutions or financial holding companies that flout provisions in the Act;
- Section 103 speaks to remedial measures that the Bank of Ghana may take against relevant persons (directors, key management personnel, and significant shareholders) that flout provisions in the Act.

This literature review is the background against which this paper assesses the role of related party transactions in the recent banking crisis in Ghana.

Methodology

The methodology adopted in this investigation is content analysis of statements put out by the Bank of Ghana (BoG). The intent is to ascertain the extent to which certain patterns of behaviour identified by BoG was common to banks that failed. Reading through the case made against each bank by the central bank, phrases like *related party transactions*, *inadequate capital*, *non-performing loan portfolios*, etc., re-occur again and again.

Content analysis is justified on grounds that banks are opaque, however, BoG is in a privileged position that gives it insight into operations of banks it supervises, which the BoG communicated to the Ghanaian public when it withdrew licenses of affected banks. In addition, the infractions that the banks were said to have committed were made openly by BoG, and in fact, a number of the banks have been hauled to court. Taken together, these provide external validity to use of content analysis.

This study quantifies the occurrence of certain words and phrases used by BoG (conceptual analysis). Thus, the researcher has no influence on the results and the subjects (banks) are not now required to behave or act in one way or the other. Implementation of conceptual analysis is at relatively low cost (researcher's time only) beyond cost of assessing BoG releases.

The contents to be analysed are BoG statements issued between August 2017 and January 2019, plus another statement issued in August 2019. Keywords used in assessing bank performance in the banking literature are the themes around which conceptual analysis is conducted. At the end, a tally of how often each pertinent word or phrase is used in explaining withdrawal of licenses of all ten banks is counted.

Findings and Discussions

Findings of the study are first presented, then discussed.

Findings

In carefully reading the statements issued by BoG, one identifies a number of explicit phrases used in assessing bank performance. Slight variations exist in the wording of some of the phrases, but largely the meanings of the phrases are preserved. The BoG makes it abundantly clear that banking licenses were withdrawn because the capital (shareholders' funds) of the banks had become inadequate or impaired to the point that the banks had become insolvent following infractions they committed against the terms under which banking licensing were issued to them.

The BoG cited the infractions listed in Table 1.

Table 1: List of infractions

Infraction	Details of infraction
(a)	The banks were members of conglomerates and engaged in illegal related party transactions
(b)	Non-executive board members failed to carry out their fiduciary duties as checks on executive directors
(c)	Non-executive board members put themselves in conflict of interest situation
(d)	Disregard for BoG credit guidelines and/or bank's own credit procedures
(e)	Problems with loan portfolio (non-performing)
(f)	Weak corporate governance and weak board oversight of banking procedures
(g)	Other breaches of provisions of Act 930, (typically unacceptable sources of capital), or BoG Directives
(h)	Illiquid/breach of cash reserve requirement

Table 2 documents infractions committed by each bank. It says that the most frequent infraction is infraction (a) *membership of conglomerates and illegal related party transactions*. This infraction was committed by eight out of the 10 banks (80%). Only two out of the 10 affected banks were not guilty of this.

Following *illegal related party transactions*, the category *Other breaches of provisions in the Banking Act 930* was next most frequent violation. 60 percent of affected banks were guilty of this infraction. As pointed out above, relevant provisions of Ghana's Banking Act 930 are sections 61, 62, 63, 64, 65 and 66, which impose limits on financial exposure and dealings with affiliates, as well as sections 67, 68, 69, 70, 71 and 72 of the Act which put restrictions on financial exposures to insiders and related parties.

Five out of the ten banks were found guilty of *committing Disregard for BoG credit guidelines and/or bank's own credit procedures; Problems with loan portfolio (non-performing);* and *Illiquid/breach of cash reserve requirement*.

Table 2: Content analysis of central bank's report on infractions

Bank	**Infraction**							
(a)	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)
UT Bank &	√	√	√	√	√	√	√	√
Capital Bank	√	√	√	√	√	√	√	√
uniBank	√	√		√		√	√	
Royal Bank	√			√	√	√		√
Beige Bank	√			√	√			√
Sovereign Bank	√				√		√	√
Construction Bank							√	
Premium Bank	√						√	
Heritage Bank							√	
GN Bank	√						√	
Total banks	8	3	2	5	5	4	6	5

Details of related parties of affected banks

UT Bank Limited, (Graphic Online, 2017).

UT Bank was a subsidiary of UT Holdings Limited, which owned the following subsidiaries in addition:

1. UT Bank Limited
2. UT Logistics Limited (provision of logistical services);
3. UT Properties Limited (real estate development and management);
4. UT Collections Limited (debt recovery);
5. UT Private Security Limited (armed and unarmed private security service);
6. Gateway Wealth Management

Limited;
7. UT Life Insurance Company Limited (life insurance);
8. UT Financial Services Nigeria Limited (loans and lease financing so-lutions);
9. UT Financial Services South Africa Limited (savings and loans).

Capital Bank Limited

The founder of Capital Bank is also said to own many other businesses. They include:
1. Ocean Spring Mineral Water Limited;
2. Breitling Services Limited;
3. Gye Nyame Realty Lmited;
4. Capital and More Co. Limited;
5. Accent Financial Services Limited;
6. Life Assurance Limited; and
7. Capital Africa Group Limited.

The founder was also said to have business interests in the following:
8. Nordea Capital Limited;
9. Commerz Savings and Loans Limited;
10. Sovereign Bank Limited (now defunct);
11. Essien Swiss International Capital Holdings Limited (ESICH);
12. First Capital Plus LLC (Zimbabwe);
13. Gye Nyame Resources LLC (Zimbabwe); and
14. Bill Minerals LLC (Zimbabwe).

Beige Bank Limited

The Beige Bank is a member of The Beige Group Limited, the holding company which has four subsidiaries which provide financial services, namely,
1. The Beige Bank (banking);
2. Legacy Pensions Trust Limited (pensions management);
3. Beige Assure/Unique Life Insurance (life insurance); and
4. Beige Capital Asset Management Limited (investments management).

uniBank Ghana Limited

uniBank is a member of a group of conglomerate companies which are subsidiaries of House of Duffuor Assets (HODA) Holdings Limited. The conglomerate consists of more than 30 businesses in banking, insurance, real estate and media. Before it went under, uniBank was the most valued member of the stable.

Here is the list of members of the conglomerate:

Banking:
1. uniBank Ghana Limited;

Savings & Loans:

2. uniCredit;

Insurance:

3. Star Assurance Company Limited (non-life);
4. StarLife Assurance Company Limited (life insurance);
5. Star Microinsurance Services Limited
6. Anchor Insurance Brokers Limited
7. Crown Insurance Brokers Limited;
8. Shield Insurance Brokers

Media business:

9. EIB Network Limited
10. EIB Network: AGOO TV
11. EIB Network: KASAPA FM
12. EIB Network: LIVE FM
13. EIB Network: STARR FM
14. EIB Network: COOL FM
15. EIB Network: ABUSUA FM
16. GH One (television)

Fund Management:

17. uniSecurities

Others:

18. Topp Core Security Ghana Limited
19. Uniprecision Printing Press Limited
20. Duffuor Foundation
21. Daily Heritage
22. Institute of Fiscal Studies (think-tank and consultancy)

GN Bank Limited

The holding company of the conglomerate to which GN Bank belonged is **Groupe Nduom**. Groupe Nduom owns many subsidiaries who are into different businesses in and outside of Ghana.

In Ghana, the subsidiaries include:

1. GN Reinsurance Company Limited
2. GN Savings/Bank
3. GN Life Assurance Company Limited
4. Bedrock Insurance Ltd
5. Groupe Nduom Ltd
6. Qualtek Co. Ltd
7. Fresh Pak Co. Ltd
8. GN Power Co. Ltd
9. Endela Africa
10. GN Concrete Ltd
11. GN Quarry Ltd
12. GN Printing Ltd
13. GN Electronics
14. GN Logistics
15. GN Farms
16. Yorke Properties Ltd
17. Sterling Protection Services Ltd
18. EPPL Co. Ltd
19. Digicut And Advertising Co. Ltd
20. Pentrust Co. Ltd
21. Gold Coast Brokerage Ltd
22. Gold Coast Holdings Ltd
23. Gold Coast Advisors Ltd
24. Gold Coast Fund Mgt Ltd
25. Monica Yorke School
26. Nduom School of Business & Technology
27. ATV Broadcasting
28. GN TV
29. Ocean One TV
30. Sunshine FM
31. Suhupieli FM
32. Kasapreko FM
33. Hejorle FM
34. Good Life FM
35. Ezzy FM
36. Enigye FM
37. Pupeelum FM
38. Puopel FM
39. Sikapa FM
40. Okyeaman FM
41. Adwenpa FM
42. Today Newspaper
43. Coconut Grove Hotels Ltd
44. Elmina Sharks FC
45. Sea Lion FC
46. Gold Coast Fund Management

Other subsidiaries exist in

47. Togo
48. Ivory coast
49. Liberia
50. United Kingdom, and
51. United States

Clearly, the Groupe Nduom is a huge conglomerate. Co-ordinating and controlling such a vast empire of business is bound to be no mean challenge.

Premium Bank Limited

Premium Bank was owed by the Vanguard Group Limited. Aside that, the central bank mentions Capital Bank and the Royal Bank as entities with which Premium Bank engaged in illegal related parties' transactions.

The Royal Bank Limited

The Royal Bank too was accused of having engaged in illegal transactions with shareholders, related and connected parties.

Sovereign Bank

The Sovereign Bank is said to be connected with owners of collapsed Capital Bank.

Discussion

The Joint Forum on Financial Conglomerates (1999) cautions supervisors of regulated entities which are members of conglomerates to be wary of the following risks as they do their work:

- *conglomerate contagion*: a situation in which if a member or some members of a conglomerate are experiencing financial difficulties, other members of the conglomerate may be perceived as having the potential to suffer the same fate simply because of common membership of a conglomerate group;
- *intra-group exposures*: direct and/or indirect claims which entities within conglomerates make on each other;
- *conflicts of interest*: for example, the decision by a bank member of a group to lend to another member may be influenced by group membership;
- *fit and proper tests:* managers of regulated entities may pass the fit and proper tests, but within a conglomerate setting, managers of the controlling firm of the conglomerate, who are superiors of managers of regulated financial firm and who do not need to undergo *the fit and proper test*, may exercise open or subtle control over many decisions (including risk taking) of the regulated firm's business or, override decisions of managers of the regulated institution who would have passed the *fit and proper test*; and
- *supervisory arbitrage*: in jurisdictions in which financial services are regulated and supervised in silos, a financial conglomerate member whose business does not fit neatly under any of the regulators, may opt to be regulated by a supervisor thought to be less strict or try to avoid regulation all together. Readers familiar with the Ghanaian situation may recall that in Ghana during the banking crisis, one entity, called MENSGOLD, tried to play this game.

The heart of the matter is that supervisory rules and practices that are enacted to apply to regulated financial institutions or standalone financial institutions cannot be extended to members of conglomerate who are not prudentially regulated. Even for financial conglomerates, whose members are all prudentially regulated, challenges exist in respect of overall coordination of supervision by different regulatory agencies. Following lessons learnt from the global financial crisis of 2007 – 2009, The Joint Forum (2011) published supplementary framework for the supervision of financial conglomerates as supplementary to their 1999 framework.

Together, the principles underlying the frameworks provide that there must be a supervisor for each financial conglomerate whose responsibilities should be group-level supervision and coordination of any other regulators that may be involved in regulating other members of the conglomerate. Secondly, there must be laid out a clear and transparent process for effective group-level supervision that identifies roles and responsibilities of regulators. Finally, there must be spelt out effective mechanism for resolving differences that may arise among supervisors of conglomerates.

Concluding Remarks

There is consensus in the literature that efficient intermediation of financial services by financial intermediaries such as banks do, support the growth of economies. Unfortunately, financial markets are not perfect, and must be regulated and supervised to increase the chances that expected results are achieved.

Regulation and supervision are aimed at i) ensuring soundness of financial institutions (called prudential regulation) and ii) ensuring that financial institutions conduct business in a fair and orderly manner in dealing with their customers (called market conduct). The later includes enforcement of consumer protection rules.

Banking in Ghana is regulated and supervised under what is referred to as the “silo” approach, or the “institutional” approach, or the “traditional” approach. That is to say, the bank regulator is responsible for regulating all aspects of banking (prudential regulation and market conduct) and does not regulate other financial service providers such as insurance, securities, or pensions. However, recent global developments within the financial services regulation space have leaned towards the so called twin peaks approach, under which all prudential regulation of all financial services providers fall under one regulator, and regulation of market conduct of all financial service providers are given to another regulator. Typically, a platform is created for the two regulators to meet regularly to compare and exchange notes.

In the Ghanaian situation, because of the “silo” regulatory environment, the central bank could only revoke the banking licenses of offending entities. Yet data presented here shows that many of the conglomerates include subsidiaries who offer other financial services.

Subsequent to the actions taken by the Bank of Ghana, the securities industry regulator has revoked licenses of more than 50 fund management firms found to be in contravention of the laws governing their businesses. The insurance industry regulator has not revoked any licenses, but has more than tripled the minimum capital required of insurance companies. The pension fund regulator has not yet taken any step publicly in this respect. Clearly, the “silo” approach to regulation is proving to be problematic. However, a number of the cases presented here included non-regulated entities, which muddies the waters further. It is probably time for Ghana to reconsider financial services regulatory architecture.

This study supports the recommendations of The Joint Forum (2011) and The Joint Forum on Financial Conglomerates (1999) discussed above. However, this paper recommends that, based on Ghana's recent experiences, banks should not be allowed to belong to conglomerate groups.

In the main, it would appear that the crisis that the Ghanaian banking sector has gone through has non-compliance with prudential regulations at its heart, once it appeared to some banks that they could get away with it. Thus, it makes sense to recommend that the central bank should be particularly vigilant with its risk-based supervision of conglomerates.

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Saints, Demons, Wizards, Pagans, and Prophets in the Collapse of Banks in Ghana

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https://dx.doi.org/10.4314/ajmr.v27i1.2

Abstract

The essence of banks in an economy cannot be underscored enough. However, poor institutional as well as unscrupulous banking and accounting practices could collapse a banking system and wreak an economy-wide havoc due to a contagion. Thus, the impact of bank failures/crises are grave. Given that this paper seeks to comprehensively discuss bank failures in the light of both agency and structural perspectives. Also, the study theorizes the causes of bank failures using Ayee's (2000) concepts and Pierre Bourdieu's theory of social practice. The study adopted a qualitative methodology and used nine failed Ghanaian banks as cases. A latent content analysis on reports of these recent nine failed banks indicated the banking crises were a reproduction of old social actions, which include weak regulatory supervision, poor corporate gover-nance and risk management practices. Besides, the culture of weak enforcement explained the collapse of the local banks unlike their foreign counterparts who had internalized the culture of their parent companies and also possessed the right cultural capitals. Further, it was observed that weak saints, hungry and deceitful demons, lazy wizards, praise and attention-loving pagans and the neglect of prophets were the issues responsible for the bank crises or failures in Ghana.

Keywords: bank failures, bank crises, saints, demons, prophets, corporate governance

Introduction

Banks are key constituents of the financial sector and instrumental in every nation's socio-economic deve-lopment (Sikka, 2009; PricewaterhouseCoopers and Association of Bankers, 2016; ILO, 2019). In modern times, globalization and digitalization have extended the frontiers of banking. These trends have facilitated the ability to establish/own banks outside one's geographical location. Thus, financial globalization enhances foreign bank's participation and presence in developing countries (Cull and Soledad Martinez Peria, 2010). As a result, subsidiary banks are enabled to access funding through their parent companies in the international markets.

Although these trends have sparked up innovation in the banking sector and a transfer of intellectual and economic capital, it has not been devoid of problems. Carbo-Valverde (2017) explains that digitalization poses new risks for regulators and supervisors, since it can create financial fragility because of the huge amount of intangible capital associated with it. Similarly, Ghosh (2016) indicates that financial globalization reduces earnings which is a precursor to bank failures.

Banking crisis is a situation in which there is substantial indication of bank distress; which is characterized by many bank runs, bank collapses, and bank losses or significant policy intervention measures focused on banks (Laeven & Valencia, 2010). Bank crisis is a global phenomenon since virtually every country in the world has experienced some form of bank failure or bank crisis (Laeven & Valencia, 2013; Honohan & Klingebiel, 2003). Furthermore, both developed and developing economies have not escaped the clutching hands of bank failures. For instance, Canada, UK, USA, Sweden, Japan as well as Ghana have had bank failures. However, the Ghanaian banking sector has witnessed the collapse of nine local banks over a two-year period spanning 2017 and 2019. These failures are worth examining hence the essence of this study.

Problem Statement

The banking industry dominates the Ghanaian financial sector and has been instrumental in Ghana's development. Specifically, the assets of banks are about 85% of the financial sector's assets (Bank of Ghana, 2018). Thus, the importance of banks to societies and the economy cannot be underrated. (Arif & Nauman, 2012). That notwithstanding, banks are predisposed to high levels of risk (Lindé & Wallgren, 2012) that could result in bank failures/crises when not properly managed. Ghana hasn't been spared of these crises. Precisely, Ghana has had about five major bank crises over the past five decades with most of the failed banks being local banks (see Antwi-Asare & Addison, 2000). This leaves us with the question of what could be accounting for the failure of these local banks?

Further, studies indicate that bank crisis is complex and difficult to reliably forecast (Falasca, 2014; Čihák & Schaeck, 2010). Also, bank crisis could be inimitable despite its pervasiveness. Thus, bank crisis reflects the banking structure specifically the banking regulations of the context of occurrence.

As a result, the debates on bank crisis and its resolution have largely been centered on regulations (DeYoung & Torna, 2013; Lietaer, Ulanowicz & Goerner, 2009). These authors argue that the structures should be critically observed in addressing bank crisis. However, it has been established that banking crises also entail numerous actors (Falasca, 2014).
Specifically, operational risk: which is one

of the key bank risks (Vyas & Singh, 2011), has an element of agency. Hence, it would be inappropriate to neglect the actors involved in bank crisis since bank practices are outcomes of the interactions between the actors and institutional logics (rules). Despite this, only a few studies have considered the role of actors in the banking crises (see Hill, 2009; Neate, 2012).

Additionally, bank crisis has grave economic and social implications. The collapse of these financial institutions (banks) saddles both the populace and the ruling government with a huge cost. Economically, bank failures and their bailouts are expensive to taxpayers (Minford, 2010). This is because the government spends large sums of the tax revenue to safeguard or recover the mess created by these institutions. Specifically, the Bank of Ghana (BoG) spent a total amount of about 14 billion Cedis, which accounts for about 3.5% of Gross Domestic Product in cleaning up the sector after the recent Ghanaian banking crisis (Dzawu, 2019; PricewaterhouseCoopers and Association of Bankers, 2019. Also, bank crisis causes unemployment (Laeven, 2011) hence stifling economic growth. Further, investors in those failed institutions tend to lose their investments which deters others from investing in the economy. Besides this could reduce the confidence of citizens in the banking system, which is considered to be under-subscribed (PricewaterhouseCoopers and Association of Bankers, 2016). Accordingly, these failures tend to have negative ripple effects on the sectors of the economy and could cause a recession.

Hence, this study seeks to gain answers to the following questions. Is the crisis new or just a reproduction of social actions? Could the structure of Ghana's banking explain the bank failures? It would also theorize the failure of the banking regulations; by specifically focusing on the actors involved in the bank crisis, by extending Ayee's (2000) conceptualization of why policies fail or succeed.

Literature Review

Causes of Banking Crisis

The economic and social implications: such as unemployment, loss of investments and others, of bank crisis makes it important to scrutinize the issues that cause it. Lietaer *et al.* (2009, p.1) state that bank crisis may not necessarily be due to managerial failure but also due to varying regulatory systems. Broadly, the factors that account for bank crises can be categorized into two; internal and external shocks. However, the explanatory variables for bank crisis could be context driven.

Generally, weakness in accounting, auditing and disclosure, poor risk management, non-performing loans, illiquidity and poor lending practices could cause bank crisis (Diamond & Rajan, 2005; Sikka et al., 2009; Sanoran, 2018). Fraudulent activities, poor bank corporate governance (CG) mechanisms as well as poor knowledge and experience of bank directors on risk and bank management can result in bank failures (Laeven & Levine, 2009; Guerrera & Thal-Larsen, 2008; Bernburg, 2016). Further, government involvement or political interference accounts for bank crisis (Brown & Dinç, 2005; IMF, 2011).

According to Dimurgüç-Kunt and

Detragiache (1998), the banking structure of a country could cause a crisis. Increased regulation as well as failure of regulatory oversight could result in bank failures (Magnan & Markarian, 2011; Calomiris, 2008). Specifically, Calomiris (2008) indicates that increased safety mechanisms of the banking sector could trigger the risk of bank failures. Again, Garcia and Nieto (2005) assert that weak supervision and lack of clearly laid down rules account for bank crisis. Thus, the lack of comprehension on some rules by supervisors causes poor diligence in their governance practices (Muranda, 2006). It is also perceived that the global crisis of other jurisdictions could lead to bank failures (IMF, 2011). Laeven (2011) also found bank runs and bank contagion to explain crisis. Excessive inflation and devaluation have been known to both account for bank failures as well (Antwi-Asare & Addison, 2000; Laeven, 2011). Further, it's been observed that national culture could influence bank performance negatively hence its failure (cf. Boubakri, Mirzaei & Samet, 2017). Thus, the framing of bank crisis considers both the regulations and values and practices of its actors.

Theoretical Underpinnings

The researchers sought to apply concepts from Ayee (2000) and Bourdieu (1977) theory of social practice to explain the banking crisis in Ghana.

Concepts from Ayee (2000)

Bank crisis, like other crisis, is a key concern for policymakers (Boubakri et al., 2017) and may contribute to the varied regulations after a crisis. Thus, whenever there are crises amidst regulation it connotes that the policy in place has failed to achieve its purpose. According to Hernando et al. (2018), since most people are beginning to devalue the efficacy of banking policies, it is expedient to observe what causes those policies to be ineffective. Therefore, the study uses Ayee's conceptualization of why policies fail to achieve their intended purposes to explain the role of the actors involved in the bank crisis. Ayee (2000, p.1) answers the question by stating that policies fail because saints are few, wizards are inappropriate, demons are many, the systems are complex and the organizations are weak.

Ayee (2000, p.14) explains that *Saints* are committed politicians and bureaucrats who formulate and follow through with the implementation of a policy even if it makes them disliked by the populace. These actors tend to be well connected politically and have the necessary resources; skills for handling employees and other actors, for successful implementation of policy. Thus, Saints are required for every successful banking policy.

Wizards are perceived to be destroyers. However, Ayee (2000, p.26) conceptualization connotes smart and critical actors who could enhance the success of policies. Therefore, he categorizes appropriate policy analysts as wizards because they can aid the saints by providing available and reliable information that could modify waning firms into effective firms. They are characterised by describing and seeking explanations to policies as well as testing them through research to provide evidence for policy reviews. Consequently, failure of wizards to perform their roles would amount to policy failures and crises.

Demons have negative connotations and do not want successful policies. Ayee (2000, p.45) refers to these actors as corrupt public officials who should be eliminated if policies are to succeed. Further Ayee (2000, p.44) asserted that demons may not necessarily be corrupt officials but also individuals who perceive a policy may threaten their power, position and competence. He added that anyone who acts negatively toward new policies because their implementation would enhance the reputation of his/her partners other than him/herself is characterized as a demon. Issues of ethics or values of actors come to bear since actors in the banking field with bad values are likely to cause bank collapse.

Further systems are believed to be a set of interrelated activities put together to achieve a goal. Hence, Ayee (2000, p.46) argues that policy success/failure must be considered within its political and social context. He further states that the system normally focuses on formulation without considering how it will be enforced. The enforcement mechanisms are thought of, after the formulation. Also, he asserted the need for policymakers to desist from making policies a private activity with just a few elites (2000, p.47) and encourage broader participation.

Ayee (2000) concepts are useful in this study because Ghana has made several reforms in the banking sector yet have had some crises over the period especially shortly after the immediate enactment of Act 930. This theory provides a lens for examining the actors involved the bank failures despite the reforms.

Bourdieu Theory of Social Practice

This theory propounded by Pierre Bourdieu examines processes and actors in a situation and how change could be made (Becker & Horowitz, 1972). It is primarily concerned with reconciling firm structures and processes and actors.

The theory has three elements namely field, capital and habitus. According to Bourdieu, a field is a system of positions and interactions among positions (Costa, 2006). Thus, it is the space which provides room for the dialectic interaction between actors and structures. The field has its rules of engagement known as field logics. Also, the position of an actor in a field is determined by his/her capital. Capital is the resources an actor has in his/her possession, which enables him/her to participate in a field (Caine, 2013). The number of capital and the kind of capital an actor possesses could change his/her position or status in a field (Bourdieu, 1986). Further, Habitus is the dispositions; values, preferences etc. of an actor (Caine, 2013). Habitus is an embodiment of societal values and some past experiences. Bourdieu (1977) claims that habitus also entails the taken-for-granted (Doxa) nature of society which is learned by the actor (Bourdieu, 1977). Habitus is perceived to be durable or lasting especially when the conditions are similar to those under which it was made (Costa, 2006). However, they can be unlearned (Caine, 2013).

These three concepts are interlinked. An interaction of the three concepts results in what is called practice. According to Costa (2006, p.875), social practices are determined by the relationships between interests and positions. However, Bourdieu discussed the com-prehension of a social actor's practices is embedded in the concept of habitus. Actor's construct reality based on their views, which depends on their position in the world they want to change or preserve (Costa, 2006). Thus the field rules shapes the habitus of an actor.

Further, Bourdieu states that the resources in a field are not evenly distributed among actors. Hence, there is a struggle among actors, which sparks up symbolic violence, especially when certain practices or ideas are taken-for-granted (Doxa). Due to the uneven distribution, a field could undergo some change or be preserved through reproduction based on field rules, habitus and capital accumulation (Bourdieu & Wacquant, 1992; p.18). The study finds Bourdieu's theory to be very instrumental in interpreting recent bank failures in Ghana amidst the bank regulations.

Research Design And Methodology

The research methodology is qualitative because the researchers wanted some rich insights on the collapsed banks to make some analytic generalisations. A case study research design was also adopted. Cases of the nine failed Ghanaian banks namely; UT, Capital, The Beige Bank, The Construction Bank, Sovereign Bank, Unibank; The Royal bank; Heritage Bank and Premium Bank were considered.

The sample was selected using the purposive sampling technique. Due to the nature of the study only documents and materials that could help explain the failed Ghanaian banks were considered. The study drew largely on the reports and press releases of the Bank of Ghana (BoG), PriceWaterhouseCoopers, expert analysis from reliable online media sites such as thebftonline, myjoyonline, citifmonline, daily graphic, ghanaweb and other peer-reviewed documents and newspapers.

The data was analysed using content analysis. Qualitative content analysis is defined as *"a subjective interpretation of the content of text data through systematic classification process of coding and identifying themes or patterns"* (Hsieh & Shannon, 2005, p.1278; Bengtsson, 2016). There are two kinds of content analysis namely the manifest and latent content analysis. Specifically, latent analysis: examining the core/inherent meaning of the text (Berg, 2001), was utilized. This method of analysis makes inferences from the text. Thus, it seeks to discover and communicate the hidden meanings of the text. The authors conducted a content analysis on the narratives gathered on the recent bank failures in Ghana and other peer reviewed documents. The narratives were used because they are believed to reflect the purposes and intentions of human actors and as well help to understand their actions (Richardson, 1990). The authors observed the texts: words were the unit of analysis, and identified their implied meaning based on the context. Consequently, the data was thematically analyzed through the lens of the theories adopted. Thus, themes such as saints, demons, wizards and so on were generated.

Findings

Brief Overview of Failed Banks

The banks that were involved in the crisis were UT Bank, Capital Bank, UniBank, The Royal Bank, The Beige Bank, Sovereign Bank, The Construction Bank, Premium Bank and Heritage Bank.

The narratives reveal the causes of the bank crisis to be non-performing loans, corrupt practices – financial engineering, inadequate capital, high inflation, fiscal account deficits, poor liquidity, high and volatile exchange rate development, governance challenges and weak financial sector supervision and regulation (BoG, 2018). According to the report, CG structures were completely disregarded. For instance, there was some collusion among management responsibilities undermining credit and risk management policies (BoG, 2019). Prior, to the collapse, an asset quality review in 2016 showed a low value of assets in the banking sector. Also, it was realized the regulators fared poorly in supervising and exercising due diligence resulting in banks' regulatory breaches. Poor ethical behaviour of some bank actors negatively affected the banking system (Banahene, 2018).

It was noted that all the failed banks were locally owned. Therefore, the regulator would have to coach local banks so they could compete with their foreign counterparts.

Ghanaian Banking Crises: Is it new or just a reproduction of social actions?

Historical experiences shape the practices of actors. It is perceived that agents reproduce certain practices if the conditions under which the habitus was learned are the same (Costa, 2006).

The researchers observed the banking field and also applied Bourdieu's concept to answer the question of whether the crises were a reproduction of social actions. Historically, the Ghanaian banking field has experienced about five major bank crises. Antwi-Asare and Addison (2000, p.21) recount the reasons for the failures in 1970 and 1983.

> "*Severe inflation led to severe undercapitalisation of banks… widespread default on bank loans...devaluation of currency….no clear quantified legal definitions relating to financial sector practices, insufficient legal penalties…and the questionable supervisory capacity of the BoG…*"

Almost a decade after that crisis, the country experienced another crisis involving two foreign-owned banks: Bank of Commerce and Credit International and Meridien BIAO, and two locally-owned banks: Bank of Housing and Construction and the Cooperative Bank Ghana, in 1990 and 2000 respectively (Oxford Business Group, 2014). Liquidity problems, corrupt practices as well undercapitalisation underpinned their failures (Antwi-Asare & Addison, 2000). The narratives on the failure of the local banks were expressed:

> "*BoG's decision to liquidate these banks followed persistent losses and the inability of banks to satisfy minimum capital requirement…fraudulent withdrawals and advances of huge sums of money worth 120 billion to A-life, a supermarket chain.*"
>
> \- Alesu-Dordzi (2019)

Again, the poor corporate governance mechanisms, ineffective supervision and some political interference were evident in the collapse of these banks. Also, the culprits were not sanctioned.

Despite these, the country witnessed a swarm of bank failures again sixteen years later hence the collapse of the nine banks under study. The recent failures are like shadows of the past. However, central to these crises has been the issue of poor ethics. Specifically, the BoG expressed it in this manner:

> *"…A number of legacy problems have plagued the banking sector including macroeconomic factors, corporate governance and risk management practices, related party transactions, regulatory non-compliance and poor supervision: questionable licensing processes and weak enforcement leading to a significant build-up of vulnerabilities in the sector".*
>
> - BoG (2018)

These observations concur with the findings of Laeven and Levine (2009), IMF (2011), Brown and Dinç (2005), Diamond and Rajan (2005), and Bernburg (2016).

The narratives connote that there has been some reproduction of past events or practices (poor CG, regulatory framework and supervision as well as inadequate risk management). This was bemoaned by the governor – Dr. Addison at an Annual (2017) dinner of the Chartered Institute of Bankers (Ghana).

> *"…In recounting history, I am seeking to draw attention to the adage that history repeats itself. Despite the improved regulatory environment and supervisory frameworks, we have witnessed the resolution of two banks this year".*

However, there have been some new dynamics. For instance, creative accounting was adopted since most of them inflated their loans and advances to customers (assets) and understated liabilities such as customer deposits.

That notwithstanding, some themes seem not to have changed – poor CG practices, poor regulatory and supervision and poor credit management. Also, the BoG has over the years remedied such issues extensively with bank recapitalization; which dates back to the 1970s, without any punitive measures for deviants (Afolabi, 2017). Hence, it could be concluded that largely the Ghanaian banking crises are a reproduction of old social actions despite the new field rules enacted for actors in the field. Thus, these field rules have not yet shaped their habitus. Besides, the doxic nature is strong, especially among the indigenous banks hence leading to a reproduction of actions befitting bank crisis.

Did the Structure of banks in Ghana Account for the failures?

The structure of banks could be explained from the perspective of capital, field positions and field rules. Thus the systems and processes of banks qualify as structures.

Ghana's banking sector is made up of both foreign and local banks. The number of local banks and foreign banks as at December 2016 was sixteen and seventeen respectively. However as at the end of 2017, there was a tie: an equal number of foreign and local entrants, so the total number of banks was thirty-four. To ensure customer security, the Bank of Ghana increased the minimum capital requirement in 2017. This increment was a pain in the neck for most of the local banks compared to their foreign counterparts. PricewaterhouseCoopers and Association of Bankers (2017, p.17) revealed that:

> *"The local banks appear quite concerned about the impact of the risk-based capital framework on their capital requirement. Even under the existing framework, some local banks may require capital injection".*

Consequently, the number of local banks declined to nine whereas that of the foreign banks fell to fourteen in 2019. In terms of branch ownership, the local banks had about 65% of the total num-ber of bank branches in 2017. That notwithstanding, the bank with the highest market share: share of industry deposits, for the years 2016 and 2017 was a foreign bank - Ecobank Ghana, except for 2018 which was GCB bank. Thus, the foreign banks dominate the banking industry in terms of number and assets although the local banks have many branches. The dominance of foreign banks in the Ghanaian banking sector concurs with Antwi-Asare and Addison (2000).

Specifically, the habitus; transposable values, from their parent organisations might have influenced their banking practices hence their dominance in the sector. Thus, the dominance of foreign controlled banks in the Ghanaian banking field indicates their high levels of economic capital - a higher proportion of banks' total assets, and cultural capital - experience and exposure. A description of this is stated below;

> "… *multinational banks appear to be less concerned about regulatory capital as well as systems and data and people and skills. These banks believe they already have the systems in place and could easily reach out to their network for assistance".*
>
> – PricewaterhouseCoopers and Association of Bankers (2017, p.17)

Unlike these foreign banks, most of the local banks lacked the appropriate structures. Banks are supposed to be managed by people with requisite knowledge, experience and possess moral integrity (BoG, 2018). This wasn't the case in most of the local banks. For instance, Capital bank: one of the failed banks, board chairman lacked the appropriate cultural capital needed to participate in the field of banking. He affirmed this by stating that:

> *"I didn't have a banking training, but I am a chairman of a bank…..But you know money is so easy to understand….I was horrible with mathematics and still horrible with mathematics but really in Finance you don't need serious mathematics, its just addition and subtraction".*
>
> - www.ghanaweb.com (2018)

The observation of foreign banks being dominant and having appropriate structures should have brought some changes in the actions of participants in the field. However, failure on the part of the key field actor – the regulator might have accounted for these failures. This is because the central issue for the collapsed local banks was governance – starting with the regulator – BoG governors and supervisors, who are the principal actors in the banking field. The poor governance trickled down to the executives of the failed banks.

> "…*governance challenges in the banking system spilled over and significantly weakened financial sector supervision and regulation, while CG structures were completely disregarded hence affecting the risk systems"*
>
> - BoG (2018)

Over the period, the regulations of BoG have been taken for granted (doxa) by most of the actors, especially the local ones resulting in symbolic violence: non-compliance to the field rules. This is asserted because despite the enactment of Act 930 in 2016, these local banks still acted contrary to the stipulations in the Act, which was expected to structure their operations. Besides, the country is known for regulations but not necessarily its enforcement.

> *"Our inability to respect the laws as a nation throws us back into the animals' kingdom… I believe that institutions should lead the way by enforcing regulations governing their sector....".*
>
> - Anokye (2019)

This idea could have been internalized by the actors of the failed local banks. Also, it could explain why a chairman of the collapsed banks; though being of high office failed to ensure its bank's activities complied with the Act. Further, the key actors – BoG as well as the Securities and Ex-change Commission (SEC) failed in their governance since they did not sanction banks that failed to submit their annual reports and undertake due diligence. Again, these observations could give credence to Boubakri *et al.* (2017) on culture playing a role in bank performance.

Actors

Ayee (2000) concepts for policy failures or success is applied to theorize the actors involved in the bank failures. In addition, the study introduces the concept of pagans and prophets. The banking field has lots of actors and they will be discussed in the subsequent sections.

Saints

According to Ayee (2000), saints are committed officials and leaders who are willing to shoulder the risk of formulating and implementing policies no matter how unpleasant they may be to the populace.

Current leadership of the Bank of Ghana

Based on this conceptualization, the researchers deduced that the current governor: as the saint. Under his leadership, he has worked closely with other officials to ensure that non-compliant or deviant banks are eliminated regardless of the cost and chastisement from the populace and some government and top officials. He bemoaned that:

> "*We inherited a financial system which was under a considerable state of distress, with banks that were not meeting capital adequacy requirement… with high non-performing loans… were insolvent and illiquid, others were solvent but illiquid*"
>
> - BoG (2018, p.4)

The governor and his team had to interact with stakeholders on how to address the problems that had bedeviled the sector.

> "*…We took decisive actions underpinned by a strengthened legal framework... we closed a total of seven insolvent banks and protected depositors' claims…to ensure the rest of the banking sector did not suffer from contagion*"
>
> - BoG (2018, p.5)

He did not pursue this agenda without counting the cost. The decision involved a huge price and the likelihood of being badmouthed by the populace and some officials who were responsible for the crisis. He asserted:

> *"…the failure of the collapsed banks came at a cost to the Ghanaian taxpayer, staff to an extent, and shook confidence in the financial sector."*
>
> - BoG (2018, p.5)

Thus, the quest to sanitize the banking sector must have been a challenging feat that demanded some resilience from the policymakers. Since, one's actions are easy to be misconstrued. He concurred with that observation.

> *"… we have taken very difficult decisions...rather unpleasant but needful decisions to ensure stability in the finance system….."*
>
> - Myjoyonline (2018)

Besides Ayee (2000) claimed that saints are public officials or leaders who make sacrifices no matter how tough and unpopular their decisions may be, to bring some transformation and sanctity. There are countless evidences supporting the fact that the current leadership of BoG have taken tough or unpopular decisions over the past two years in their quest to clean up the banking sector (BoG, Jan 2019).

The actions of the current leadership of BoG could be explained by Bourdieu's concept of habitus. This is because the governor is known to have some knowledge and experience on bank failures and bank reforms (see Antwi-Asare & Addison, 2000). Hence those dispositions shaped his actions and decisions to put in mechanisms that could aid banks in the country to compete or interact with other banks even at the global level.

<u>*Government*</u>

Also, per our observation, the government could be considered as a saint in addressing the bank failures. This was inferred from the actions of the government on this matter and validated by the vice president:

> *"The government will support any policy/initiative aimed at consolidating gains made so far in the banking sector"*
>
> - The Ghanaian Banker (2019, p.11)

This assertion was further affirmed by the governor:

> *"…the bank of Ghana has enjoyed considerable political support enabling it to be effective to implement these rather difficult measures to comprehensively reform the banking and specialized deposit-taking institutions sectors of the finance system"*
>
> - BoG (2019, p.3)

Demons

Demons are used to symbolize public officials and individuals who engage in corrupt practices. They seek the failure of policies. In this paper, actors who contributed by way of collusion and abuse of power are considered as demons.

<u>*Some governors and officials from the Supervision Department of the Bank of Ghana*</u>

We theorized the immediate past deputy governors and officials from the supervision department of the BoG particularly during 2014 and 2016 as one of the demons of current Ghana's bank crisis. This is because despite, the power that was wielded in them by the current Act 930 and Act 918 enacted in 2016, these officials failed to perform their duties diligently. Besides, poor supervision and law enforcement by the regulatory agency has been one of the causes for the failures. The actions of the past BoG governor and officials validate this observation:

> *"Our predecessors continued to provide liquidity support to these weak failing banks without addressing the underlying problems that led to illiquidity and insolvency of these institutions".*
>
> BoG (2018, p.5)

Further, it was found that the previous leadership took for granted the resources; regulations, from which their position and power were derived from. Their social conditioning could explain their practices. As though the failure of the leadership to perform its fiduciary duties wasn't enough, they equally ignored expert assistance. This is buttressed by the point that –

> *"There is no evidence to show how the previous management took steps to mitigate the risk of the ultimate failure of these institutions as required to do under Act 930. The then management failed to implement actions suggested by the IMF that would have halted the collapse of the multitude of financial institutions. Instead, massive amounts of liquidity support were granted insolvent banks and also through other banks as conduits and taking no steps to ensure that such support was used for the benefit of providing liquidity to depositors".*
>
> BoG (2019, p.1)

Again, an action of the immediate past deputy governor fits the theorization by Ayee considered as a demon. Ayee (2000, p.44) asserted that demons could be officials who perceive a policy may threaten their power, position and competence. Besides, one of the questions lingering on the minds of people was where actors of the regulatory bodies were whilst some banks made a mess of themselves. This could be the reason he tried to justify his actions in the past and probably because he feels his competence is being threatened by stating:

> *…there were well-intentioned reasons some of the collapsed banks were issued licences... Key among these was the thinking at the time to encourage indigenous banks to also feature in the banking landscape…."*
>
> \- Kunateh (2019)

He also moaned that

> "*Every action that was undertaken was guided by its regulations….and we did our best to ensure that the right thing was done".*
>
> \- Myjoyonline (2019)

Deducing from the discourses above, it could be that the past executives of BoG feel threatened/uncomfortable that their current colleagues will be praised for making and implementing difficult but necessary policies whereas they couldn't do much to safeguard the situation. His actions are described below:

> *It is instructive to note that AJ…when the decision was taken to revoke the licenses of UT Bank and Capital Bank and had every opportunity to propose any other strategy for addressing the insolvency of the said banks if he felt there was a better and more effective strategy…what he fails to admit is the fact that the swift and decisive action taken by the Addison-led management team provided relief for other segments of the financial system…."*
>
> \- BoG (2019)

Thus, AJ is theorized as a demon: based on Ayee (2000) conceptualization, because of his negligence and lack of commitment to assist the policy interventions of the current administration as well as not doing due diligence during his tenure of office which amounted to the failed banks. However, considering his position as a past policy maker he could also be considered as a fallen saint since he failed to live up to the expectation of his office.

Directors, Bank shareholders and related parties
These actors colluded with management and engaged in malpractices. All attempts by the policymakers to rectify their misdoings came to naught.

Monies granted some of the failed banks were spent lavishly by the directors instead of investing them properly to arrest the negative situations of their banks. Almost all of these banks had their directors, shareholders and connected parties conniving in some fraudulent or improper activities that were harmful to the going concern of the banks. This was depicted clearly in the case of UT Bank, Capital Bank, and UniBank. These three banks' directors and shareholders in connivance with bank management shared BoG liquidity supports amongst themselves and connected people. For instance:

> "*UniBank's shareholders and related parties have admitted to acquiring several real estate properties in their own names using the funds they took from the bank.*"
>
> - BoG (2018, p.7)

Some of these actors disregarded the regulatory body because of the power they wielded in society as well as their political connections. As a result, some still managed to get some support from BoG despite their short-comings. Evidence shows that:

> "*…a key shareholder of one of the failed banks managed to obtain liquidity support from the Bank of Ghana using third party banks as its agents*"
>
> - BoG (2018)

Most of these share-holders sought to outsmart the banking system of operations. For instance, Heritage Bank, The Construction Bank, The Beige Bank and Sovereign Bank had their shareholders contribute nothing in terms of capital. Evidence to validate that are presented below:

> "*…Sovereign bank's initial capital contributed by its shareholders was funded from transfers from Capital Bank which was presented to Bank of Ghana as investments on behalf of the bank… Promoters of Sovereign bank admitted they did not pay for the shares they acquired in the bank*"
>
> "*Construction Bank's capital was loans from NIB Bank and UniBank*".
>
> - BoG (2018, p.9)

These capital contributions were however non-existent/inaccessible. The deceptive means some used in acquiring their licences even attest to the fact that they can be classified as demons of the banking system.

Management of Banks
It is mindboggling to read that one of the reasons for the bank collapse was creative accounting and financial engineering practices considering all that the accounting profession has undergone after the global

crisis. The financial statements of most of the banks suggested they had satisfied the conditions for going concern. However, an inquiry by KPMG in undertaking their receivership assignment revealed otherwise:

> "*The balance sheets of three of the banks showed very high overstatements of asset values. Before the adjustments, Sovereign, The Beige and The Royal Bank recorded totals of about 462 million, 2.428 billion and 1.004 billion Cedis respectively as against 191 million, 499 million and 376 million Cedis reported after adjustment and reclassification have been made*".
>
> Amlanu (2019)

Despite the ethical training accountants receive, it is quite worrisome to see these actions. Is it a matter of changing identities because they find themselves in a banking environment and as such forget their identity and act as bankers?

Also, the role of the bank managers in these failures cannot be understated. Due to the poor CG structures, most of the managers acted in their interest as against the welfare of the banks. The inability of bank management to challenge poor CG practices and whistle blow fraudulent bank practices accounted for the bank crises.

<u>*Bad Customers*</u>

Customers of banks who defaulted on their loans could also be classified as demons. One of the reasons for the bank failures was high non-performing loans connoting the defaulters of loans and advances were high. The contribution of customers to bank crisis is described:

> *"People hardly talk about the contribution of customers in bank collapses…it is common to see exuberant customers flocking a new bank, pretending to be first-time bankers …they divert funds taken from their previous bankers into these new banks. Some naïve bankers swallow this bait and without associated credit risk analysis recommend big facilities to these fraudsters. These funds are quickly sent back to where they belong, leaving a vacuum in the new banks"*
>
> Quarcoopome (2018)

Therefore, policy formulators and implementers must not be oblivious of the impact of bad customers on the well-being of banks.

Wizards

Wizards are perceived as policy analysts with available and reliable information which could assist policymakers in formulating and evaluating policies. Whilst appropriate wizards aid policy success, inappropriate wizards cause policy failures. Empirically, Pricewaterhouse Coopers Country Senior Partner – V. A. and his research team could be classified as appropriate wizards. Pricewaterhouse Coopers and Association of Bankers have consistently been under-taking banking surveys in Ghana to help identify the problems and challenges in the industry and the likely solutions to be applied. Together, V. A., and E. N. of PwC and N. A. D. of KPMG have assisted the BoG with reliable information in dealing with the failed banks.

> "*The Bank of Ghana appointed N. A. D of KPMG as official administrator for UniBank to help ascertain the true financial condition of the bank, protect depositors*

> *fund and explore how the bank could be returned to viability within a period of no later than six months"*
>
> BoG (2018, p.5)

However, the external auditors of the failed banks as well as the officials of GSE and SEC could be likened to inappropriate wizards. This is because, despite the auditors' access to the documents and details of their clients, they constructed a reality that was contrary to their clients' actual performance. Thus they failed as watchdogs for the users of the accounting information of the dissolved banks. And this concurs with the Sikka (2009) observation.

Also, SEC and GSE equally failed in their tasks. SEC de-listed UT Bank after BoG had revoked the bank's license despite UT bank's failure to publish its financial statements twice in a row.

Pagans

From the data, some actors involved in the banks' failures could be classified as pagans. Pagans here represent individuals who have doubt and are self-indulgent. There have been a number of discourses suggesting the collapse of the banks under study was staged. Some of the individuals are still in doubt despite some facts been clarified. Specifically, a CEO's of one collapsed bank articulated that he finds the dissolution of some of the banks particularly Heritage Bank to be politically motivated:

> *"I find that extremely, extremely unfair, Mr. K. A. asserted adding: Maybe I don't have all the facts, but from where I stand, I find it really unfortunate".*
>
> - www.ghanaweb.com (2019)

A. K. further asserted that the collapse of the bank he managed has resulted in severe business challenges for other companies under the holding group of which he is the president. He emphasized that the actions of the BoG have defamed him. Another CEO of a failed bank, A. E., also claimed that his refusal to hand over the bank he was managing to one of the top current political officials is what led to the collapse of the bank despite facts on how he mismanaged the funds of the bank.

Prophets

Again, some actors predicted the state of the country's banking system before the collapse of the banks in question. The study found two of them to be researchers: academia and consultancy.

The IMF in 2011 based on its assessment of the country's financial statement revealed that the sector was plagued by governmental influence, poor risk management, and high NPLs and predicted a likely bank crisis. Again, Aboagye and Ahenkora (2018) predicted the failure of three banks.

Also, one of the experts who happen to be the current vice president of Ghana predicted in 2016 the closure of about eight banks. He based his predictions on the non-performing loans and the asset quality review in 2015. Akrong (2018) indicated per his analysis the collapse of nine banks.

Conclusion

It was observed that that poor corporate governance systems from both the banks' and regulator perspectives amounted to the recent bank failures in Ghana. Specifically, the presence of improper structures and opportunistic actors who took advantage of the gaps in the banking system resulted in the collapse of the nine banks. The study set out to find the causes of Ghana's bank crisis from both the structural and agency perspectives. It can be concluded that the recent bank crisis in Ghana which resulted in the collapse of nine banks was largely a reproduction of past banking practices and poor structures.

In addition, it could be asserted that the presence of fallen saints; hungry and deceptive demons; inappropriate wizards; praise-seeking pagans, and lack of attention to prophets were responsible for the bank crisis or failures in Ghana. However, the possibility of a contagion was minimized by the timely intervention of some saints and appropriate wizards.

The study contributes to research by its application of Bourdieu's Social Theory of Practice (1977), Ayee's (2000) concepts of policy failures and some religious concepts to explain Ghana's bank failures. The researchers hope that policymakers would consider all these actors when formulating and implementing policies.

Future studies could use different research methods to gain deep insights into why some actors; especially auditors, failed to predict and communicate the failure of these banks.

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Why Fidelity Bank survived the banking crises in Ghana, but UT Bank collapsed: An explanation from Strategic Management

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https://dx.doi.org/10.4314/ajmr.v27i1.3

Abstract
The question of why some firms succeed whilst others fail even though they operate in the same industry, have similar sizes and face the same market conditions continue to attract research attention. Strategic management addresses this question in part and contends that the explanatory factors for such phenomenon is accounted for by how firms strategically align their internal capacity to the changing trends from their external environment especially political and competitive forces. The paper draws on two strategic management frameworks (i.e., PESTLE and Porter's five forces) to explain why Fidelity survived, but UT failed in the recent environmental turbulence which bedeviled the banking sector of Ghana though both started just about the same time and had similar size. In line with the assumptions of the two frameworks above, the present paper argues that the failure of UT bank and the survival of Fidelity Bank is accounted for by how each bank aligned its internal capacity to the regulatory and competitive forces that hit the banking industry. The paper employs secondary information (e.g., financial reports, web materials, newspaper articles), coupled with the PESTLE and Porter's five forces frameworks to explain the issue. The findings are that whilst the internal capacity of Fidelity Bank (e.g., its capital adequacy) was aligned to the regulatory demands of the Bank of Ghana, UT's internal conditions were so fragile that they failed to satisfy the regulator's demands in the deregulation. Following from the results of the study, implications on theory, practice and public policy are suggested.

Key words: Strategic management, UT Bank, Fidelity Bank, PESTLE, Porter's five forces

Introduction

The paper uses two strategic management frameworks (PESTLE and Porter's five forces) to shed light on why Fidelity Bank Ghana Limited survived the recent banking crisis in Ghana whilst UT Bank collapsed. The paper conceptualizes the concept of "banking crises" in Ghana as the period when the Bank of Ghana increased the minimum capital requirement of banks from Ghc 120 million in 2013 to Ghc 400 million in 2017 by the Bank of Ghana leading to the collapsed of UT bank and Capital bank and consolidation of others (e.g., Construction bank, Biege bank, UniBank). The paper compares the two banks because they started approximately the same period, having similar size, operated in the same geographical market and faced the same market influences. In analyzing the event, the study dwells heavily on the political, legal/ regulatory and social cultural factors in the PESTLE model, coupled with two variables from Porter's five forces (rivalry among existing firms and threats of new entry). From a strategic management perspective, a firm's ability to strategically manage the PESTLE factors, especially political and legal and rivalry among firms as well threat of potential entrants by aligning their internal capacity and core competences predict to a higher degree, its probability of survival in times of crisis.

It is indicated that in August 14, 2017, the Bank of Ghana (BoG) publicized in a press statement the cancelation of UT bank's Universal Banking license. The reason was that the UT Bank became deeply insolvent. Implicitly, the bank's liability exceeded their assets which meant that it was unable to pay off its obligations when they fall due from prudent financial management point of view. The Bank of Ghana indicated during a press conference that, UT Bank's plans to address their insolvency failed to meet the central bank's requirement. Consequently, a purchase and assumption agreement, a pro-forma balance sheet of liabilities and assets to be purchased were declared and a pool of bidders expressed interest. From BoG's perspective, GCB Bank was selected among three principal bidders to acquire the bank. It was told BoG took the decision because they saw that UT's continuous operations could have endangered not only their depositors' funds, but also presented a high degree of threat to the stability of the Ghanaian financial system. Therefore, the decision taken by BoG was meant to protect customers' funds and reinforce and fortify the financial sector of Ghana. GCB took over liabilities and selected assets of UT Bank (PwC, 2019; Citifmonline, 2017). From Bank of Ghana's viewpoint, this action was in line with the provisions contained in the section 123 of the Banks and Specialised Deposit-Taking Institutions (SDIs) Act, 2016 (Act 930).

The paper shows that from a strategic management viewpoint, UT failed, but Fidelity survived on the basis of how each of the banks was able to address the requirements from the Bank of Ghana using their internal capacity which is tantamount to the management of the PESTLE and Porter five forces frameworks. Strategic management is important because, of the various academic disciplines (e.g., human resource management, project management, finance), it is one of the core disciplines that focuses on a fit between a firm's internal operations vis-à-vis their external influences. Consequently, strategic management concerns the strategies for aligning the internal activities of a firm to the changing trends in the external environment. Implicitly, managing strategically capitalizes on firms' internal capabilities in the most efficient and effective manner to generate competitive success for firms in the market place (Ulgen and Mirze, 2004). In strategic management, the method of aligning a fit between the internal and external operating environment is called strategy. Strategy is conceptualized as the rules and approaches that create a fit aimed at enhancing an organization's competitiveness in the marketplace (Thompson, Strickland, 2001). Compared to strategy, Hunger and Wheelen (2007) explained strategic management as all-encompassing management decisions which accompany a number of strategic actions that determine the long-term performance of an organization in a competitive marketplace. Strategic management is needed because organizational managers need to predict the survival and sustainability of their institutions (Hamal and Prahalad, 1999).

As indicated above, the two frameworks which enable firms to understand the influences from the external environments are the PESTLE and Porter five forces (Pearce and Robbins, 2009; Porter, 1980). These frameworks convert the influences from the external environment (e.g., the recent regulations from Bank of Ghana that led to the consolidations of banks in Ghana) into a set of variables which then allow firms to strategically manage their external impacts. Consequently, organisations' ability to survive and remain sustainable depends to a large extent on how the external variables are properly managed using their internal capacity. Enormous benefits are derived when internal factors are strategically combined to deal with external influences.

Overall, the paper seeks to answer two main questions as follows.

1. To what extent does the PESTLE framework in strategic management explain the failure of UT and the survival of Fidelity Bank?
2. To what extent does Porter's five forces framework shed light on the collapse of UT and the survival of Fidelity?

To address these questions, the remaining of the paper is structured as follows. Section two presents the literature review while section three details the method, analysis and results. Section four looks at discussion, conclusions and implications.

Literature Review

Overview of the Banking Sector in Ghana

In 1989, the government of Ghana made policy changes in the financial sector and introduced the banking law known as the PNDC Law 225. In 2004, government introduced a new Banking Act and introduced changes in the minimum capital requirements, including the removal of secondary reserves. In 2008 after the Act, the minimum capital requirement for banks was increased to GHC 60 million and later increased to GHC120 million in 2013. In this period, some of the banks could not meet the minimum capital requirement and merged with others, whilst some were also acquired by other banks. Examples of such mergers in Ghana include The Trust Bank Limited (TTB) and Ecobank, Intercontinental Bank and

Access Bank etc. Flowing from this restructuring, the total banks in Ghana then was 27 universal banks with 16 owned by foreigners whilst the other 11 were owned by Ghanaians. Of this, six controlled approximately over half of the total assets in the financial sector (Aminatu, 2015). The introduction of the new Banking Act (i.e., Act 2016, Act 930) led to the flooding of the banking sector of Ghana by foreign banks, particularly hailing from Nigeria. For instance, the percentage of Nigerian banks which operated in the Ghanaian banking industry consisted of approximately 26% and this was because the minimum capital requirement in Ghana was moderately low as compared to similar capital requirement for establishing a bank in Nigeria.

Overview of UT and Fidelity Bank

The sub-section presents overview of the case banks to offer a reflection of what these banks have been doing in Ghanaian banking environment.

UT Bank

UT Bank started as Best Financial Services in 1997 and was co-founded by Mr. Prince Kofi Amoabeng and Mr Joseph Nsonamoah, both Ghanaians. It started as a non-bank financial service providing quick financial assistances to prospective borrowers. Having established subsidiaries over time under the name UT Holding Limited, they got listed on the Ghana stock exchange in 2008 (www.utbankghana.com). In the same year, BPI Bank was acquired and in 2010, Unique Trust Financial services and UT Bank Ltd to become UT Bank Limited. While the bank's vision was “redefining banking,” the mission was “the preferred bank for businesses and individuals to provide quality and outstanding products and services with speed and efficiency in order to generate customer satisfaction and build shareholder value”. UT bank distinguished itself by being able to deliver financial products to customers in less than 48 hours with a slogan of “Unique Bank for Real People”. UT bank had international affiliates in three countries, namely Germany, Nigeria and South Africa. The bank won the second most respected company and their CEO won the most respected CEO award for 2007 and 2010 (en.wikipedia.org/wiki/UTBank).

Fidelity Bank

Fidelity Bank which started operating in October 1998 as a discount house and obtained license to work as a universal bank in 28 June 2006 is owned by Ghanaian and foreign individual institutional investors (ADB, SSNIT and its executives) (www.gipcghana.com/66-ghana-club-100/company-profiles-2010/193-fidelity-bank-ghana-limited.html).

Specifically, it was the 22nd bank to be licensed by the Bank of Ghana (Banking Act, 2004, Act 673). The bank established Fidelity Asia Bank and acquired Procredit Saving and Loan Company limited in July 2012 and October 2014 respectively. Fidelity as a financial services group consists of Fidelity Bank Ghana Limited, Fidelity Asia Bank Limited and Fidelity Securities Limited. It is a Tier 1 bank and has the mission and vision of being among the leading three banks with international standards in Ghana and a world-class financial institution that provides superior returns for stakeholders (shareholders, employees, customers, regulators, and community as a whole) (www.

fidelitybank.com.gh/investors/about-us).

Conceptual Framework

A number of strategic management tools can be used in analyzing the external environmental influences including the PESTLE framework, Porter's five forces and Porter's diamond (e.g. Pearce and Robbinson, 2009; David, 2013; Riasi, 2015). This study is limited to the first two frameworks (i.e., the PESTLE and Porter's five forces).

The PESTLE framework

Usually termed as PESTLE (Peace and Robinson, 2009), its elements can be broken down as: political-legal (P/L), socio-cultural (S), economic (E), ecological (E), and technological (T). Pearce and Robbinson, 2009 argue creating and sustaining competitive advantage is a possibility with the continuous assessment of the external environment. Yuksel (2012) argues that no organization can survive in the long-run and remain profitable without considering the dynamic influences from the external environment. Therefore, addressing the external influences of an organization's external environment remains a core duty of every firm. Following Pearson and Robinson (2013), the PESTLE framework assists organizations to understand the external environment from the perspective of five variables. Although all the variables in the PESTLE framework is explained, this study draws more on the political and legal factors to shed light regarding why UT failed, but Fidelity survived.

Political-legal

The political/legal variable refers to the extent of government interventions in an economy. It consists of regulations that come from government ministry, agency and departments. Following Song, Sun and Jin (2017), examples of these factors include tax policies, trade policies, environmental laws that affect organizations positively or negatively in their quest to survive and be sustainable. The regulatory factors could be threats if they serve as constraints to the organisation's success. For instance, a case in point is the opening up of the banking system in Ghana for more private participation which led to the establishment of many indigenous and foreign banks. Consequently, such a move serves as an opportunity as well as a threat. Furthermore, the amendment of the Banking Act from Act 2004 (Act 678) to the new Banking Act 2007 (Act 738), coupled with the recapitalization by the Bank of Ghana are genuine political-legal factors which subsequently led to the collapse of many banks, including UT, the consolidation of many banks (e.g Biege Capital) and the collapse of many micro finance institutions.

Economic factors

The economic factors refer to general variables such as interest rates and inflation that affect all organizations in a country. According to Koumparoulis (2013) these variables determine the capital accessibility, cost and demand of products. For instance, tax exemptions or increments, interest rates (high or low), the exchange rates (depreciation or appreciation of the cedi) can affect all organisations operating in particular country irrespective of their industry. The resultant effect of these factors is that a firm that is not placed strategically to address this issue cannot survive in the operating environment and therefore the alignment of one's internal factors to external economic factors determines why one firm survives while another collapses.

Social cultural factors

The social factors that affect a firm consists of the beliefs, values, attitudes, opinions, lifestyles and tastes and preferences as developed from cultural, ecological, demographic, religious, educational and ethnic conditioning (Pearce and Robbins, 2009). As social attitudes change, so does the demand for various types of products and this tends to reflect the behaviour and buying attitudes of citizens.

Koumparoulis (2013), further adds that these social factors are affected by fashion. Additionally, demographic trends have the potential of affecting the demand for products, hence these changes can serve as threats to any organization whose products appear to be outdated in regard to the changing attitudes. David (2013) has indicated that all organisations in any industry will stagger and be challenged by the opportunities and threats arising from changes in social, cultural, demographic and environmental variables, therefore a significant determinant of survival and otherwise.

Technology

Pearce and Robinson (2009) assert that organisations must accept technological change in order to avoid obsolescence and promote innovation. Accordingly, technological breakthrough might be a threat to existing industries if not taken advantaged off (Koumparoulis, 2013). Technological advancement may be sources of input enabling firms to become more efficient (Koumparoulis, 2013). However, the unavailability of funds to purchase the technology may be a threat to organisations that are not financially strong to acquire. For instance, an organisation's inability to acquire ATMs, cash depositing machines within the Ghanaian banking sector could make them followers instead of leaders in the industry if that becomes the technology of the day.

Ecological factors

Ecology as noted by Pearce and Robbins, (2009) is the relationship among human beings and other living things (animals, water, land) and the air, soil and water. In a sense, organizations acquire their inputs from the environment, hence corporate survival and profitability of businesses partly hinges on policies from central government and non-governmental organisations. Concerning its management, governments are regulating these by ensuring that the ecology is protected through the passage of various laws. These laws sometimes can be more stringent than ever thereby putting pressure on organisations and so organisations that fail to adhere to these regulations are susceptible to bad reputation.

Porter's five forces framework

The five forces model, popularly called, the Porter's Five Forces describes the state of competition in every industry (Porter, 1980). Whilst all the variables in this model will be explained, the paper dwells on the rivalry among firms and the threat of competition to shed light on why UT failed, but Fidelity survived.

Threats of New Entrants

In every industry, this refers to new firms as potential competitors who are willing to enter the industry (Pearce and Robinson, 2009). Dess and Lumpkin (2003) add that profits of the established firms may be eroded by these entrants therefore, when new entrants are able to easily enter the industry, the degree of competition increases thereby posing a risk as well as threats to existing players. However, once new entrants are in the industry, the incumbents can also strategize by retaliating to discourage these potential entrants by either using substantial resources or cutting prices of their products in order to deter them, but this depends on the internal capacity of the firm. Also, incumbents may extend warranties, add features and offer financial specials. Related to this influence to the recent happening in the Ghanaian banking industry is the influx of large multinational foreign banks such as Zenith Bank and UBA from Nigeria. This had led to intense competition in Ghana's banking industry. Consequently, indigenous banks such as the UT bank lost their initial advantages such as offering loans to customers within 48 hours.

Bargaining Power of Buyers

Following Porter (2008), when these customers are large, they may threaten the players in the industry by forcing down prices and other significant changes that have high cost implications. Therefore, from the perspective of the model, this constitutes a threat that needs to be constantly monitored and managed (Pearce and Robinson, 2009; Porter, 2008; Indiatsy *et al.*, 2014).

Bargaining Power of Suppliers

This variable consists of organizations that provide the materials, knowledge and information to grant a firm the needed resources required to produce goods and services (Martinez & Wolverton, 2009). Suppliers of inputs (automated vending machine, labour etc) can put pressure on the organization by threatening to reduce the quality of inputs or increase the prices at which the supplies are sold. Karagiannopoulos et al. (2005) are of the view that supplier power mirrors that of the power buyers possess. Further, they opined that the analysis of supplier power usually concentrates on the relative numbers and concentration of suppliers relative to the industry players as well as the level of difference in the inputs they supply. Porter (2008) reiterated that powerful suppliers create more value for themselves by placing higher charges on the raw materials, limiting quality or services, or shifting costs to industry participants thereby making it a threat. Therefore, to survive and be profitable, the management of supplier power cannot be ignored in the industry.

Threats of Substitutes

According to Porter (2008), a substitute product that can be used by customers of the industry constitutes a threat to existing players. The substitutes although from a different industry can reduce the demand for a particular product if customers switch to these alternatives (Johnson et al, 2005). Karagiannopoulos et al. (2005) also argue that the threat of substitute poses a significant challenge on an organization's profitability. These substitutes can put a ceiling on the prices of products thereby increasing the intensity of competition (David, 2013). Consequently, this is a threat that no one can ignore because in combination to the above, they determine the success of a firm in an industry.

Rivalry among existing competitors

This variable refers to actions of existing players in the industry which pose as threats to other firms in the competitive struggle between organisations in an industry as they aim to capture market share from each other (Hill and Jones, 2007). Porter (2008) posits that already existing firms in an industry compete among themselves using forms such as new product introductions, advertising campaigns, price discounts and service improvement. Thus, the level to which rivalry influences the profit within the industry, first depends on the intensity of the competition and secondly on the basis on which they compete. Overall, firms that ignore the behaviour of their competitors risk failure because it determines their survival or failure in industry. As already indicated the influx of large multinational foreign banks such as Zenith Bank and UBA from Nigeria has heightened the competition among banks in Ghana. The banking sector is seen as one of the most competitive in the economy of Ghana. Despite the strict measures and policies put in place by the Bank of Ghana to restrict the number of participants in the industry (e.g., minimum capital requirement of 400 million Ghana Cedis), players in the industry continue to compete among themselves. Many have capitalized on technological innovations to deliver their services through platforms like automated teller machines (ATMs), e-banking, telephone banking, and SMS banking. For instance, when UT started, it was accorded one of the leading indigenous banks in Ghana and chalked lots of successes (e.g., in 2010, UT had 26 branches nationwide with Total Assets at the tune of GH¢516,177,000) yet all these advantages eroded due to the competition from other indigenous and foreign banks.

Empirical literature

Several studies have posited that the five forces explain the state of competition in an industry. Indiatsy et al.,'s (2014) study in Kenya in the banking sector and Wu et al., (2012) in Philippines show that these forces affect the attractiveness of an industry. In the case of Wu et al., findings were that while rivalry had the greatest impact on the firm's profitability, the threat by substitutes was key. This was followed by threats from new entrants and the bargaining power of buyers. Similarly, Smith (2008), used Porter's five forces model to conduct an industry analysis of 22 banks in the US to examine the online retail banking industry. Smith (2008) explained that economies of scale as an entry barrier can pose substantial hurdles to new players within the financial market. Further, technology has become a game changer in the current state of affairs within the industry, and as a result, larger and already existing banks no longer wield an advantage based on the economies of scale that were presented in the past. Smith (2008) also described powerful buyers as another important force in the process of analyzing the industry environment.

Boafo, Kraa and Webu (2018) assessed the impact of Porter's five forces on the performance of banks within the Ghanaian banking industry. Conveniently selecting Ecobank GH, Barclays Bank and Fidelity Bank, findings show that Porter's five forces significantly guide banks to strategically manage the state of their competition. The bargaining power of suppliers had the most effect on a bank's performance amongst all the five forces. Nonetheless, although the presence of telecommunication companies provide substitutes in the form of mobile money services, banks in Ghana have responded to it by adopting a strategy of linking up customer accounts to their mobile money account and have moved ahead to digitize their retail banking products in a bid to gain sustained competitive advantage.

Methodology

The study is a qualitative document analysis on two banks. In line with Corbin and Strauss (2008) and Rapley (2007), documents used were examined and interpreted before an understanding and empirical knowledge was gained. Following Bowen (2009), several documents can be employed in qualitative research which includes, but not limited to minutes of meetings, brochures, diaries, web materials, annual reports and newspapers. This study is based on annual reports and website information from UT and Fidelity bank. The data are content analyzed using Table 1 and Figure 1.

Data from the Financial Reports and Web Information

UT Bank

In the year 2000, Unique Trust had a total asset that exceeds GHC 1,500,000. UT bank was ranked as the best Non-Banking Financial Institution (NBFI) in 2003 by the Ghana Club 100. The total asset of Unique trust rose from GHC 55,316, 000 to GHC 120, 912,000 in 2006 to 2009 respectively. UT bank acquired majority shareholding in a Ghanaian Commercial bank called BPI Bank and became UT bank in 2008. Consequently, UT Bank was listed on the Ghana Stock Exchange the same year. The bank had 16 branches nationwide in 2009 and it increased to 26 branches in 2010 resulting in a total asset of GHC 516,177, 000. The report indicated that in 2011, the bank created and opened a subsidiary code-named as UT life. Again, during the Ghana Banking Awards which was held in 2011, several awards were won by UT bank (e.g., Bank of the Year 2011, Best Bank, IT/Electronic Banking, 1st Runner up- Customer Care, Retail Banking, Socially Responsible Bank and the 2nd Runner up Corporate Banking. In 2012, UT bank was adjudged the most respected company in Ghana. This was rated by the PricewaterhouseCoopers and B&FT newspaper in Ghana.

Fidelity Bank

Total assets of the bank increased from 1,029,926 to 1,333,031 for 2011 to 2012 respectively while total equity also moved from 55,568 to 120,612 same year (Annual report, 2012). As at 2019, Fidelity bank's total assets stood at GHS10,478,022, a total equity of GHS 877,048 with 76 branches and over 1million customers with an improvement from the previous year (assets, 7,015,823 and equity, 691,605) (Annual report, 2020; 2019). The bank offers a range of financial services including investment and personal banking and mortgages. The bank boasts of over 60 awards. From the Business and Financial Times Newspaper, in August 28, 2016 Fidelity Bank won the 15th Edition of Ghana Banking awards. In this event, the bank was adjudged in the banking industry for 2015, including Corporate Social Responsibility Bank of the Year. At the 2015 edition of the Ghana Telecom Awards, Fidelity took three awards including the Best Bank in Mobile Financial Services and Best Bank Investment in ICT Infrastructure, while their Chief Information Officer took the Chief Information Officer of the Year. Again, the bank was adjudged the 2017 Best Local Bank and the Best Local Investment Bank for the fifth consecutive time in Ghana by EMEA Finance Limited. Other awards gained the same year are the Premium Quality Banking Service of the Year, (Entrepreneur Foundation of Ghana), Most Valuable Partner (Xpress Money), CIMG Bank of the Year (Chartered Institute of Marketing Ghana) (Annual report, 2018). Most recently (2019), the Bank received the Pioneering MoMo Partner Bank Award (Transaction & Electronic Banking) MoMo Partner Bank Front Runner Award (Transaction & Electronic Banking), Best Bank in Ghana (EMEA Banking Awards in London) and Best Bank in Ghana (The Banker Awards in London). Table 1 below summarizes the data above and compares the two banks.

Table 1: Similarities and differences between UT and Fidelity.

Indicators	**UT Bank**	**Fidelity**	**Similarities/differences**
Starting date	Started 1997 as Unique Trust Financial Services	Started 1998 as discount house	Both started approximately the same year
Ghana Club 100 Award	UT was awarded the best Non-banking financial institution (NBFI)	No corresponding activity as UT	UT is ahead of Fidelity in this case
Total Asset in 2006	The total asset of Unique trust rose to GHC 55,316, 000	No corresponding activity as UT	UT is ahead of Fidelity in this case
Acquisition in 2008	Unique Trust acquired BPI bank to become UT bank in 2008	Fidelity also did an acquisition	Fidelity also did an acquisition along the line by acquiring Procredit in 2014
Listed on the Ghana Stock Exchange	In 2008, the UT Ghana was listed on the Ghana Stock Exchange	No corresponding activity as UT	UT was listed in the Ghana Stock Exchange
Total Asset in 2009	The total asset of Unique Trust rose to GHC 120, 912,000	UT was higher	UT is ahead of Fidelity
Total branches in 2009	UT bank had 16 branches nation wide	UT bank was higher	UT had more branches than Fidelity at this time
Total branches in 2010	UT branches increased to 26 nation wide	UT had more branches at this time	UT had more branches compared to Fidelity
Total assets in 2010	UTs total assets rose to GHC 516,177,000 ($89,309, 121)	UT was higher in terms of total assets	UT was ahead of Fidelity

Table 1 (continued)

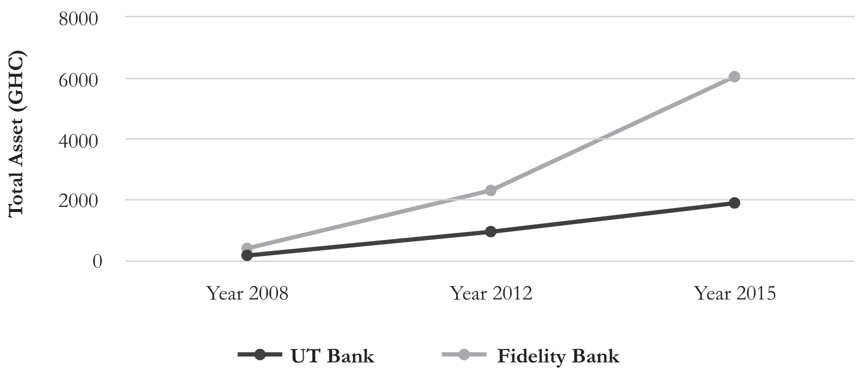
Indicators	**UT Bank**	**Fidelity**	**Similarities/differences**
Ghana Banking Awards	Won "bank of the year award" at the 11th edition of Ghana Banking Award (2011)	1. Won 15th Edition of Ghana Banking Award (2015) 2. Corporate Social Responsibility Bank of the Year (2015)	Both won Ghana Banking Awards at one time
Most respected company	1. Won 2nd Most respected company ward in 2007 2. Won Ghana's most respected company awards in 2009	No corresponding activity as UT	Fidelity was not accorded with the accolades of most respected company in Ghana
Most respected CEO of UT	Won this in 2007, 2010	No corresponding event as UT	None of Fidelity's CEOs was publicly acclaimed as the respect of Ghana
Acquisition of a bank	BPI bank	No corresponding activity as UT	Fidelity did not undertake acquisition at this time
Profiled in a book of Africa's greatest entrepreneurs	UT was profiled in a book of Africa's greatest entrepreneurs	No corresponding activity as UT	Fidelity was not profiled in a book of Africa's greatest entrepreneurs
Best Local Bank and the Best Local Investment Bank	UT bank did not receive this type of award	Fidelity started to outperform UT in 2017	Fidelity rising
MoMo Partner Bank Front Runner Award	UT bank did not receive this type of award	Fidelity rising in 2019	Fidelity rising
Best Bank in Ghana (EMEA Banking Awards in London) and Best Bank in Ghana (The Banker Awards in London).	UT bank did not receive this type of award	Fidelity rising in 2019	Fidelity rising

Source: Authors' own compilation from web information, financial statements of both banks (2006 – 2012) plus a presentation delivered by Robert M. Bennin, Executive Director, Temple Advisory on the Failure of UT and the Survival of Fidelity, April 2019

From Table 1 above, although both banks started around the same year, UT Bank had more awards and accolades compared to Fidelity Bank in the initial stages (Column 2, Table 1). For example, Ghana Banking Awards, case topics in Business Schools, Most Respected Company, Most Respected CEO, and Profiled in a book on

Africa's greatest entrepreneurs. Again, at the end of 2008, both banks had a similar balance sheet with UT bank having a Return of Equity almost double that of Fidelity Bank. At the end of another round of capitalization in the banking industry in 2012, UT had a higher equity position than Fidelity Bank. Yet regardless of the success that UT chalked (Table 1) the bank started to decline as Fidelity started to outperform UT. The Figure below is from the financial statements of both banks and presents their final performance.

Figure 1: Combined Financial Performance of UT and Fidelity Bank



Sources: Financial statements of UT and Fidelity 2008 – 2015

Discussion

The results of the data from the respective financial statements showed that despite the numerous and impressive awards, UT started to decline and eventually collapsed. So, what made Fidelity to bypass UT even though they did not win all those impressive awards that UT won (Table 1). In this section we bring the two integrated conceptual frameworks from the literature review to explain the differences. The survival of Fidelity could be because of the alignment of their internal situation to suit the changing trends from the external environment. Implicitly, it was about effective management of PESTLE, especially the political and/or the regulatory influence which emanated from Bank of Ghana. Again, the influx of foreign banks in the Ghanaian banking environment (e.g., Nigerian banks), coupled with rivalry among the local players (Porter five forces) heightened the state of competition. UT started well, offering loans within 48 hours, but as the competition in the banking industry grew, their unique product got lost as they could not quickly innovate. However, for Fidelity to sail through to the point of meeting the Bank of Ghana's requirements without being collapsed or consolidated is an indication that their internal capacity aligned very well to both the competition and regulatory influence.

For instance, around year 2000, UT had a total asset of 1.5 million old Ghana Cedis and 2011, 11 years on had GHC560 million. Here the percentage difference is unimaginable (UTs Financial statements, 2000 & 2011). So how can a firm have all these advantages (successes as presented in Table 1) and all of a sudden, sink into a demise? Until then Fidelity was nowhere near UT (Table 1), but now Fidelity is among the top 5 banks in Ghana and aims to be in the top 3. Meanwhile, they started operating fully in 2008 and in a space of 10 years, are in the top 5 banks in Ghana.

The explanatory factors are that first fidelity never lost sight of the political/legal factors in the PESTLE model. For instance, the revocation of UT's license came from Bank of Ghana which was simply the management of a regulation, an external environmental issue which is a prediction from a strategic management perspective. There is therefore the need for companies to strategize in advance. For instance, it was indicated that when UT bank's liability exceeded their assets, they were asked to submit a restructuring and capital restoration plan aimed at addressing the insolvency. Yet it was indicated that the strategies submitted were found to be inadequate leading to its revocation. Consequently, UT failed to manage the regulatory issue initiated by BoG with their internal capacity, but Fidelity did. This is a clear indication that Fidelity ensured that its internal mechanisms constantly matched and aligned with the external influence (i.e. regulatory influence from Bank of Ghana). This confirms that the strategic management of the PESTLE framework is a key determinant of corporate survival.

Another critical factor was the socio-cultural factor in the PESTLE model. For instance, when UT changed to being a bank, it failed to adapt to the socio-cultural influences in the banking practice in Ghana. This is because the culture of giving loans ready in less than 48 hours implies that UT savings and loans was brought into UT banking services. However, it is being argued that in general, while salary loans can be processed within 48 hours, a meaningful corporate and investment loan cannot be concluded in 48 hours. Yet UT was providing all sorts of loans in 48 hours. Meanwhile the socio-cultural characteristics of Ghanaians (PESTLE model) and the culture show that if an organization does not do serious due diligence on a loan application, it will likely go into bad loans. This is due to the probability of falsification of key information which is perceived to be common among Ghanaian loan applicants. Yet UT failed to adapt and continued with its old strategy, but Fidelity did otherwise and focused on the external environment and survived.

The implication here is that during the transition from the Savings and Loans Company to a bank, UT bank failed to adjust their vision to match their new banking status. They failed to realize the fact that they had migrated from the savings and loans industry into the banking industry with a different environment. This translates to mean that their competitors, customers, and creditors became different. It also meant that the political, economic, technological, ecological, and socio-cultural environment have changed and therefore they should have revised their plans to achieving their vision of providing quick loans. This is very critical because it shows that the management of

UT bank did not consider the PESTLE analysis critically especially the socio-cultural attitudes of Ghanaians and the regulatory influence.

Implicitly, without an understanding and application of the PESTLE model, it will be difficult for a firm to understand its market and survive in times of external pressure. This, Fidelity did perfectly; for instance, Fidelity started with both retail and corporate banking as well. It started with the concept of post office banking, just to get a bit of retail. When they realized that, that aspect was not really working, thereby learning by doing, they started agency banking, then to SMART account, trying to do everything possible and changing the strategy by understanding the market step-by-step (PESTLE and Porter five forces). This is strategic agility of applying the PESTLE which means studying the market and bringing up a product or idea. So, in effect, they were expanding their reach, acquired pro credit because pro credit had done such a great job with SMEs. Hence, after the merger, Fidelity had a branch network of 80, 96 ATMs, 300 agencies and 700,000 customers. They leveraged enablers, i.e. technology (digitization) and a contact center running since 2014 although there are banks today without contact centers. Fidelity understood the market (PESTLE) and built core capabilities to serve the market; they had an App, which could do anything (local, international, transfer, payment). Today people are not expected to visit the branch. In all these, Fidelity knew that capital was important, so they started building their capital base (aligning internal capacity to meet changing trends of the environment). As it was their mission to be in the top five banks, it will need to grow its capital, hence the recapitalization requirement was achieved as they had a capital of 270 million. Unfortunately, this is not the case for several banks that have been in existence for over 20 years. In conclusion, using the PESTLE model to understand the market in order to survive cannot be ignored.

In a liberalized economy, Porter's five forces model admonishes firms never to forget the threats of new entrants and embark on a deliberate strategy to combat them. Concerning rivalry, UT started with a unique advantage when it was a savings and loans company, but it was argued that fierce competition following the influx of large multinational foreign banks from Nigeria among others limited its success with respect to the size of deposits and market share. This is because these foreign competitors capitalize on their strong financial backing to outperform several local banks. Meanwhile, Fidelity survived the threats from these new entrants and the competition as it is currently among the top 5 banks in Ghana. Generally, it can also be argued that UT's collapse indicates that the Bank could not withstand competition in the banking industry. Implicitly coupled with its inability to meet the regulatory requirements, unlike Fidelity, its services became uncompetitive in line with competition among rival firms in the same industry. This case establishes the essence of environmental scanning. Through this process, organisations get to identify opportunities to be exploited and more importantly, threats to be defended against. Secondly, while strengths are identified and capitalized upon, weaknesses are minimized or improved.

Again, in Indiatsy *et al's*. (2014) study, the author's found that the application of Porter's five forces significantly improved the performance of banks in Kenya. This result parallels with Wu et al's., (2012) study in Philippines which found that Porter five forces affect the attractiveness of the industry. They provide evidence to show that the industry's profitability is impacted greatly with the most effect coming from rivalry, substitutes, threat from new entrants and bargaining power of buyers. Also, in a Ghanaian study that assessed the impact of Porter's five forces on the performance of banks within the Ghanaian banking industry, Boafo, Kraa and Webu (2018) confirm the findings that Porter's five forces significantly contri-buted to the performance of banks in Ghana by influencing profitability.

Another challenge which led to UT's demise could be poor diversification strategies. For instance, Universal Banking license means that all Tier 1 banks are allowed to do both retail, investment and mortgage banking. The mistake UT made was that it shifted depositors' funds into long-term financing options requiring longer maturity period. In their attempt to diversify their portfolios, they ventured into riskier territories that they had no systems and competencies to manage coupled with the granting of mortgage loans without first understanding that segment of the market. A deeper understanding of the external environment could have been possible using the PESTLE and the five forces models.

Conclusion

We believe that given the changes in our contemporary world, having market insights from the PESTLE and Porter five forces (i.e., knowing what is happening in your market) are critical. Consequently, managing strategically has become one of the strategic moves that companies cannot do without. Strategic management frameworks (e.g. Porter's five forces and PESTLE) give control to organizations to survive and remain sustainable from the influences of the external environment. Unlike Fidelity Bank, UT Bank collapsed because of its failure to understand and align its internal arrangements to the changing external environments using the strategic management tools above.

Implications of the study

External analysis from the strategic management discipline has been identified as a sine qua non for operational sustainability. The paper's main contribution is that the recent banking crises in the Ghanaian business environment lends credence to external validity of the strategic management framework, in particular, the PESTLE framework and Porter's five forces. The other contribution is that exploring the tenets of strategic management from an under researched context creates an opportunity for the understanding of the research community to be enhanced in terms of comparing results from the new geographical context to the more established geographical contexts (e.g. the western countries).

A key practical implication is that due to the changing trends in the banking industry, coupled with the on-going fierce competition, corporations especially banks must fortify, strengthen and re-establish their risk and compliant departments. Once these departments are established, employees must be trained to use the PESTLE and Porter's five force framework in external analysis.

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Does Foreign Banks Entry Influence Domestic Banks' Efficiency? Evidence from Ghana

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https://dx.doi.org/10.4314/ajmr.v27i1.4

Abstract
The study investigates the effect of foreign bank entry on the efficiency of domestic banks in Ghana. The study applies the Stochastic Frontier Analysis (SFA) technique and the system Generalized Method of Moments (GMM) estimator on bank specific level data, spanning the period 2000 to 2015. The results show that foreign banks with an average profit efficiency of 74.7% are more profit efficient than domestic banks with a score of 71% which conforms to the global advantage hypothesis. This suggests that foreign banks are able to maximize revenue through the generation of interest income on loans and investments better than domestic banks due to the foreign banks' comparative advantage in terms of international expertise. Further, the system GMM results indicate that the entry of foreign banks has contributed to the profit efficiency of domestic banks in Ghana. This positive spillover effect of foreign banks is manifested in their transfer of international expertise, technological knowledge, quality banking services and competitive pressure to domestic banks. In addition, bank size and liquidity are essential determinants of the profit efficiency of domestic banks in Ghana. The findings of the study imply that bank regulators in developing countries should push for reforms that eliminate implicit and explicit barriers that may hinder the entry of foreign or new banks.

Introduction

Banking has increasingly become more globalized, driven by deregulation, improvement in communications and technology, and more importantly economic integration (Berger et al., 2000). Over the last few decades, the entry of foreign banks in developing countries has in-creased sharply, although there is variation in the mode of entry. Foreign banks in most developing countries control over eighty (80) percent of the shares of the banking industry (Kiyota, 2011). In regions like Africa, foreign bank entry has taken an increasing turn due to the reduction of trade barriers in financial services. The trend is the same in Ghana, where, the influx of foreign banks has increased steadily over the years with foreign banks owning more than 60 percent of equity capital (Adjei and Chakravarty, 2012).

It is now well documented that the influx of new banks into a domestic banking industry does not only strengthen competition among banks, but also promotes efficiency by way of technological transfer and adoption of global best practices. It also allows banking techniques such as good corporate governance and innovations to spillover to domestic banks (Detragiache et al., 2008). In other words, they transfer to domestic banks the skills and technology that enhance risk management and internal controls. It has been argued that the entry of foreign bank brings about competition to domestic banks, which is noted for playing a role in quality and access to financial services as well as efficiency in their operations.

However, what is not certain in the extant literature is whether foreign banks entry influences domestic banks efficiency. Clarke et al.,(2005) argue that while the entry of large foreign banks promotes small enterprises' access to finance, if these foreign banks are too many to the extent that they dominate the industry in terms of asset and branches, it might lead to unfair competition against the domestic banks and in some cases cause serious impairments that can eventually knock them out of the market. This might be so because foreign banks have the capacity and resources to investigate and get information (both soft and hard) about borrowers and businesses they can embark on anticompetitive schemes by "cherry picking" borrowers, which will worsen the remaining credit pool for small domestic banks (Detragiache et al., 2008). Moreover, most of the profits gained by foreign banks are channeled into major investible projects in their native countries. This can have an overall negative effect on small businesses by mitigating the positive effect of foreign bank entry experience.

Since the beginning of the financial sector reforms and liberalization program in 1988 (which became known as FINSAP) as part of the World Bank-IMF sponsored market based structural adjustment program in 1983, the entry of foreign banks into Ghana's domestic market has increased tremendously. As at the start of the study period in 2000, there were 16 banks of which 6 were foreign owned. At the end of 2015, 17 foreign banks out of 29 banks dominate the banking industry in Ghana. Increasing foreign ownership within the banking industry poses an interesting issue concerning the role of foreign banks in developing countries. Although, a growing number of studies (Saka 2012; Adjei and Chakravarty 2012; and Alhassan and Ohene-Asare 2016) have focused on the technical efficiency of banks in developing countries, the literature on the effect that the entry of foreign banks has on the domestic indigenous banks is limited.

Moreover, despite the influx of foreign banks into the country's banking space that has, in no doubt, increased competition and deepened financial intermediation, and the expected positive spillover effect on domestic banks' efficiency, the recent banking crisis in Ghana makes revisiting this issue even more critical for the future stability of the banking sector. It is interesting to note that all the seven banks and several other nonbank financial institutions that got their licenses revoked between 2017 and 2019 by the Bank of Ghana were domestic and largely home-grown banks and institutions. While the central bank and experts have attributed the collapse of these banks to the absence of good corporate governance practices as the key factor leading to their collapse, it will be important to gauge whether domestic banks have benefited in anyway (particularly in efficiency gains) from the influx of foreign banks which normally comes with international best practices in good corporate governance and management. Or whether their presence is inimical to the stability and growth prospects of domestic banks.

The key question therefore is, what is the effect of the influx of foreign banks on domestic banks' performance in terms of their efficiency? This paper first estimates and compares the efficiency levels of foreign banks with domestic banks and second, investigates whether foreign bank entry contributes to the efficiency of the banking industry in Ghana. The paper adds to the existing literature by examining the profit efficiency of banks in Ghana using the Stochastic Frontier Analysis (SFA) technique as opposed to the cost efficiency and Data Envelopment Analysis (DEA) approach which dominate the banking efficiency studies in Ghana. Empirical works using the non-parametric DEA methods typically focus on technology rather than economic optimization. They are therefore not suitable for comparing firms specializing in different inputs or outputs (Ikhide, 2000). The two advantages that the SFA has over the non-parametric DEA is that it separates random errors from the production inefficiency taking into consideration the prevalence of exogenous shock and also less sensitive to outliers. The inefficiency and random error terms are separated by making explicit assumptions about their distributions.

The rest of the study is organized as follows: Section 2 presents some stylized facts about the Ghanaian banking industry. Section 3 provides the theoretical and empirical literature on banking efficiency. Section 4 outlines the empirical model, the estimation techniques and sources of data. Section 5 presents the empirical results and Section 6 concludes.

Overview of the Ghanaian Banking Industry

Prior to the financial sector reforms in the late 1980's, there were only 11 banks of which state-owned banks dominated the banking system. Most of the banks set up were wholly or majority owned by the public sector, while government acquired minority shares of about 40 percent in foreign banks. Out of eleven (11) banks, which existed prior to the reforms, only two (2) were foreign-owned banks and the remaining nine (9) banks were state-owned banks. Figure 1 depicts the trend of the ownership structure of banks in Ghana during the period 2000 to 2015.

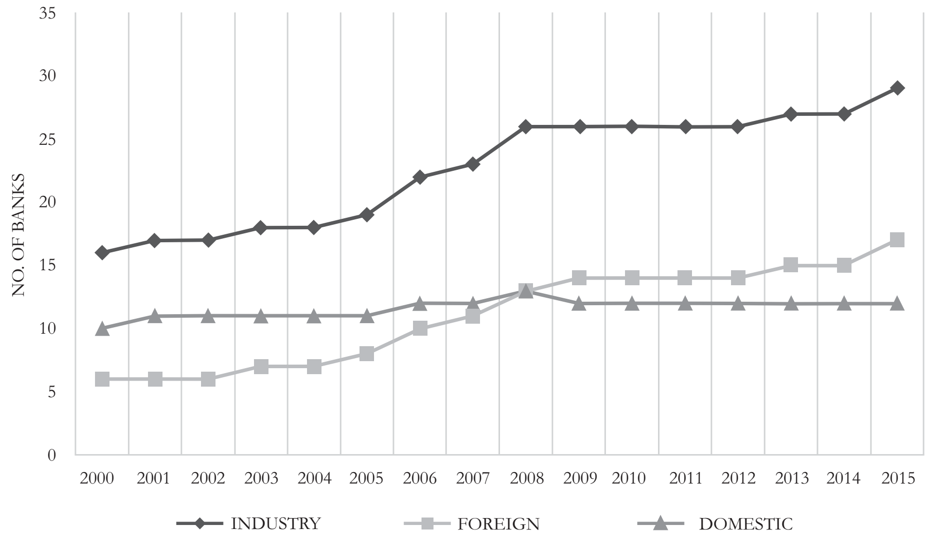


Figure 1: Ownership Structure of Banks in Ghana during 2000-2015

Source: Author's computation using data from the Ghana Banking Survey

As indicated in Figure 1, the number of foreign domestic banks has been increasing over the years. The influx of foreign banks has more than doubled from six (6) at the beginning of the study period in 2000 to seventeen (17) in 2015 due to the ongoing financial sector reforms that includes the liberalization of the financial sector. During the 2000 to 2015 period, there have been lots of mergers and acquisitions, liquidation of banks as well as privatization of some state-owned banks in Ghana due to increasing adjustments in regulatory, capital or minimum capital requirement (Osei-Assibey and Asenso, 2015). The banking sector is relatively small, consisting of 29 universal banks as at the end of 2015 of which seventeen (17) foreign banks and twelve (12) domestic banks. According to the IMF Staff Report (2013), the banking industry in Ghana is highly concentrated, with the top five biggest banks accounting for more than fifty (50) percent share of the market in terms of total assets, which is relatively moderate compared to other countries in the region.

The banking industry in Ghana has undergone some challenges of which public domestic banks have been the most affected. The industry has witnessed high risk of non-performing loans due to ineffective monitoring and screening as well as banks inability to deal with economic hardships in the country. The efficiency of public domestic banks and even some foreign banks have declined, hence the Bank of Ghana (BOG) has further increased the minimum capital requirement of banks in Ghana to about GH¢120 million which was implemented for all banks at the end of 2012.

The BOG also increased the monetary policy rate to 21 percent in November 2014 from the 16 percent rate in December in 2013 and raised it further 22 percent in 2015. The increases in the monetary policy rate were to assist in controlling the effect of inflation and depreciation of the local currency (Ghana Cedi). The average lending rate increased from 25.6 percent in 2013 to 28.9 percent in 2014 due to an increase in the average base rate from 21.5 percent in 2013 to 25.7 percent in 2014. The increase in the average lending rates resulted in an increase in the total industry interest income on loans and advances to about 64 percent in 2014 (Ghana Banking Survey, 2015).

Literature Review

The Efficiency Concept

In general, efficiency measures a firm's ability in minimizing costs, maximizing revenues, or maximizing profits, contingent on existing technology. The theoretical framework of efficiency is premised on the studies of Koopmans (1951) and Debreu (1951) and it is related to cost and the production function introduced by Shephard (1953 and 1970). His production function considered multiple outputs which are different from classical production theories of a single output. Efficiency is defined as the ratio of weighted outputs relative to weighted inputs. According to Berger and Humphrey (1997), efficiency measurement in banking industry refers to banks' ability to generate outputs (render an optimal combination of financial services) with a given set of resources (inputs). Efficiency measurement ranges between zero, corresponding to the least measure and one, indicating the optimum. From the extant literature, there are two main concepts of efficiency applied in banking efficiency, namely; cost efficiency and profit efficiency. Cost and profit efficiency definitions correspond to the essential goals of economics. Thus, minimization of cost and maximization of profit. Both cost and profit efficiency are important because banks seek cost and profit optimization by minimizing cost as well as maximizing profit.

Profit Efficiency

Profit efficiency refers to the ability of a bank in maximizing its profit with a specified level of inputs and prices of outputs. It relates to the profit function which captures the economic goals of firms, by considering both costs and revenues. Thus, it offers more useful information for managers in evaluating efficiency. Based on the market conditions, profit efficiency can be estimated in two forms, namely, standard profit efficiency and alternative profit efficiency. Standard profit efficiency is premised on the assumption of a perfectly competitive market in which firms have no control in influencing prices in the input and output markets. Alternative profit efficiency assumes the existence of imperfect competition within the input and output markets. Thus, it is premised on the assumption of firms having market power in price settings. Banking firms take the prices of inputs and output quantities as given. Hence alternative profit efficiency is estimated using prices of inputs and output quantities instead of output prices. This paper adopts profit efficiency because it constitutes a better measurement of efficiency than cost efficiency, since it considers both revenue and costs and thus provides a complementary information in addition to cost efficiency. Hence it provides a useful information for managers in evaluating efficiency (Maudos *et al.*, 2000). Additionally, profit efficiency captures the revenue effect reflecting on the differences of management's decisions or investments that are neglected in cost efficiency which ignores variation in revenue across banks. According to Berger and Mester (2003), the "use of profit approach may help take into account unmeasured changes in the quality of banking services by including higher revenues paid for the improved quality, and may help to capture the profit maximization goal by including both costs and revenues".

Empirical Review

Empirical studies on banking efficiency have sought to examine the effect of foreign bank entry on the efficiency of banks. Foreign bank entry refers to the situation whereby foreign banks establish operations in another country by setting up a subsidiary or a branch.

The literature on bank ownership and efficiency is very broad and comprehensive. Research on these studies across the globe suggests that in developing countries, foreign banks operate efficiently compared with domestic banks. This may be attributed to the theory of global advantage hypothesis postulated by Berger *et al.,* (2000) which asserts that foreign banks outperform domestic banks due to advanced technologies and superior managerial skills. In developed countries, foreign banks are less efficient compared with domestic banks as stated by the home-field hypothesis in the form of competitive advantages for domestic banks stemming from subculture, language differences, and absence of organizational diseconomies. In summary, in developing countries, foreign banks are more efficient compared with domestic banks whereas, in developed countries, domestic banks operate efficiently relative to foreign banks (Claessens *et al.*, 2001). The extant studies are ambivalent concerning banking efficiency under different ownership. The following are some studies whose main focus were based on cost and /or profit efficiency, comparative analysis of the efficiency of domestic and foreign banks, the impact of foreign bank entry on operations of domestic banks around the globe, Africa and in Ghana.

Claessens *et al.,* (2001) suggest that in developing countries, foreign banks are more profitable compared with domestic banks while domestic banks had a lower profit than domestic banks in developed countries. The study examined the effect of foreign bank entry on domestic banking markets using a sample of 80 countries between 1988 and 1995. Further, the results suggest that the influx of foreign banks leads to a decrease in the profit margins of domestic banks. Similarly, Liutho *et al.,* (2006) found evidence which suggests that the influx of foreign banks leads to a reduction in profitability and revenue for domestic banks. Using a dynamic panel estimation for a sample of 319 banks from ten (10) Central and Eastern European Countries (CEEC) over the 1995-2001 period, the study analyzed the short-term effect of the influx of foreign banks on performance within the banking industry. The findings of the study further revealed that the influx of foreign banks increases the overhead cost of domestic banks suggesting that, in the short run the entry of foreign banks raises competition within the domestic banking industry.

Sturm and Williams (2004) in their study "Foreign bank entry, deregulation and bank efficiency" analyzed banking efficiency in Australia covering the period 1998-2001. Using both DEA and SFA approaches, they analyzed the technical and scale efficiencies of banks in Australia during the pre-deregulation era and post-deregulation period. They found evidence that foreign banks have a higher input efficiency level compared with domestic banks primarily due to foreign banks' superior scale efficiency during the post-deregulation period.

Karas *et al.,* (2010) measured the efficiency of banks in Russia over two points in time (2002 and 2006). The study employed the Stochastic Frontier Analysis in estimating the efficiency of domestic and foreign banks in Russia. The findings indicated that foreign banks and state-owned banks are more efficient than private domestic banks. The difference in efficiency levels between state-owned banks and private domestic banks has not reduced since the introduction of insurance deposits. The study concluded that the influx of foreign banks contributes more to the efficiency of the banking industry in Russia, which is consistent with the study by Liao (2010). Rouissi and Bouzgarrou (2012) evaluated the efficiency of domestic and foreign banks in France from 2000 to 2007. The study used the Stochastic Frontier Analysis in examining factors that determine cost efficiency for a panel of 40 foreign and 62 domestic banks. The findings of the study suggest that foreign banks operate more efficiently compared with domestic banks, which contradict previous empirical studies such as Claessens *et al.*, (2001) and Lensink *et al.,* (2008) which concluded that in developed countries, domestic banks are more efficient.

Pertaining to studies in Africa, Kirkpatrick *et al.*, (2008) analyzed the cost and profit efficiency for a panel of 89 banks in 9 countries in Sub-Saharan Africa (SSA). The results revealed that profit inefficiency is relatively higher compared to cost inefficiency. The findings of the study further indicated that the influx of foreign banks leads to a reduction in inefficiency implying that foreign banks' entry enhances the performance of domestic banks in SSA. Kiyota (2011) sought to compare the efficiency of domestic and foreign banks for a sample of 29 countries in SSA covering the period 2000 to 2007. Utilizing the parametric approach (SFA), the study analyzed the cost and profit efficiency of banks under different ownership. The second stage analysis employed Tobit regression to investigate factors that affect the efficiency of banks in SSA. The results reveal that foreign banks are more efficient compared with domestic banks and also the influx of foreign banks enhances the efficiency of domestic banks.

Regarding studies in Ghana, Saka *et al.,* (2012), analyzed the technical efficiency of Ghanaian banks using the DEA technique for a sample of 25 banks spanning the period of 2000-2008. The study sought to evaluate foreign bank entry on the efficiency of domestic banks. Using the Tobit regression in the second stage, independent variables were regressed on efficiency estimates. The findings suggested that the influx of foreign banks coupled with a less concentrated industry contributes to the efficiency of domestic banks. The results of the study revealed that the mean efficiency estimates of domestic banks were higher than the average efficiency score for domestic banks, which may be due to high start-up costs that foreign banks face when entering the host country.

On the contrary, Bokpin (2013), examined the "effect of ownership structure and corporate governance on bank efficiency" within the banking industry in Ghana during 1999-2007 period. Employing the SFA method, efficiency measures were computed using both translog cost and profit functions. He found evidence that foreign banks have cost advantages over domestic banks. On the other hand, domestic banks are more profit efficient than foreign banks in Ghana. The variation in the findings of *Saka et al.,* (2012) and Bokpin (2013) may be attributed to different efficiency measures and estimation techniques employed.

Methodology

Methods for Estimating Efficiency

Most of the studies in the literature have focused on conventional accounting ratios (simple ratio-based) including return on assets, return on equity and net interest margin, while others have employed a number of alternative frontier efficiency measurement methods. The frontier methods, premised on economic theory, evaluate the performance of banks in a multi-dimensional framework by considering multiple inputs and outputs. Additionally, frontier techniques give reliable and consistent performance of decision-making units compared to the conventional ratio analysis. Hence the frontier estimation is deemed superior to the conventional ratio analysis.

There are two major approaches that are mostly used in measuring efficiency frontier. These are the parametric method and non-parametric method. The parametric approach specifies a precise functional form for the frontier and estimates parameters using sample data for inputs and output. Estimation of efficiency using a parametric technique is premised on economic optimization, given the basic assumption of a stochastic optimal frontier. The most applied parametric methods in bank efficiency include the Stochastic Frontier Analysis (SFA), Distribution-Free Approach (DFA) and the Thick Frontier Approach (TFA). The non-parametric approach, on the other hand, does not require a specific functional form in estimating the frontier. It captures the measurement of technological efficiency, based on technology and not economic optimization. Examples of the non-parametric method used in banking efficiency include Data Envelopment Analysis (DEA) and Free Disposal Hull (FDH). This paper adopts the SFA because it is the most widely used parametric technique. An advantage of the parametric technique is that it considers the use of hypothesis testing in relation to the goodness of fit of the model. Its demerit, however, lies in the fact that it requires an explicit functional form which may be restricted in most cases.

The Stochastic Frontier Analysis (SFA)

The SFA originated from the studies of Aigner and Chu (1968), Battese and Corra (1977) and Meeusen and Broeck (1977). The SFA specifies a functional form of the output variable (profit efficiency), makes provision for the random error term as well as permitting the making of inferences. The transcendental logarithmic (translog) functional form is employed in estimating profit frontier functions because the translog specification is very simple, flexible and most commonly used. Some of the notable studies that have made use of SFA include: Bonin *et a*l., (2005), Karas *et al.,* (2010), Kiyota (2011) and Bokpin (2013).

Estimation of Profit Efficiency using SFA

Profit efficiency refers to the ability of a bank in maximizing its profit with a specified level of inputs and prices of outputs. It relates to the profit function which captures the economic goals of firms, by considering both costs and revenues.

The study adopts alternative profit efficiency measure in estimating profit efficiency. As opined by Berger and Mester (1997), alternative profit efficiency is very useful and realistic when the assumptions of perfectly competitive markets do not hold as in the case of Ghana. Additionally, banks exhibit higher variability of output quantities compared to prices of outputs and thus can better explain the variation in the dependent variable (Tabak *et al.,* 2011).

The SFA in estimating profit efficiency following a translog specification is expressed as:

$$In(\pi + \Phi + 1) = \alpha_0 + \Sigma_i \alpha_i InW_i + \Sigma_i \beta_i InY_i + \tfrac{1}{2}\Sigma_i \Sigma_j a_{ij} InW_i InW_j + \tfrac{1}{2}\Sigma_i \Sigma_j \beta_{ij} InY_i Y_j + \tfrac{1}{2}\Sigma_i \Sigma_j \gamma_i \mathrm{jInW}_i \mathrm{Y}_j + \Sigma_i \delta_i InZ_i + \tfrac{1}{2}\Sigma_i \Sigma_j \delta_{ij} InZ_i Z_j + \tfrac{1}{2}\Sigma_i \Sigma_j \theta_{ij} InZ_i Y_j + \tfrac{1}{2}\Sigma_i \Sigma_j \rho_{ij} InZ_i W_j + V_{it} - U_{it}, \quad (1)$$

where,
π denotes profit before tax;
Φ is defined as the absolute minimum value of profit (π) for banks used to eliminate negative profit;
W denotes prices of inputs;
Y denotes quantities of outputs;
Z denote a set of control variable; and
$\alpha, \beta, \gamma, \delta, \theta$, and ρ are unknown parameters to be estimated. Profit efficiency estimates lies between zero, which is the lowest efficiency measure and one denoting the most efficient measure. Any deviation from one indicates banks' inefficiency.

Table 1: Summary of variables employed in profit functions

Symbol	Definition
π	Profit before tax
	Outputs
Y_1	Loans and Advances
Y_2	Investments

Table 1 (continued)

Symbol	Definition
	Input Prices
W_1	Price of Deposits = (Interest Expense/Deposits)
W_2	Personnel/Labour Price = (Personnel Expenses/Total assets)
W_3	Depreciable assets = (Other operating expenses/Total assets)
	Control variables
Z_1	Equity/Total assets
Z_2	Total assets (proxy for size)

Source: Author's construct

Definition of Inputs and Outputs Variables

The paper adopts the intermediation approach for evaluating bank efficiency as pioneered by by Sealey and Lindley (1977) which considers banks as financial intermediaries channeling funds from surplus spending units (savers) to deficit spending units (borrowers). The intermediation method as indicated by Berger and Humphrey (1997) is most appropriate for evaluating banking efficiency because managers of banks take into account the reduction of total cost as well as non-interest expenses. The selection of inputs and outputs is in line with studies such as Kiyota (2011), and Adjei-Frimpong *et al.,* (2014). All inputs, outputs, and control variables are measured in Ghana cedis (GHS). Table 2 provides a summary of variables and their definition used in analyzing profit efficiency.

Model Specification for Foreign Bank entry on Efficiency of Domestic Banks

The second stage analysis of this study is to analyze the effect of foreign bank entry on the efficiency of domestic banks based on the profit estimates. The study adopts the model by Claessens *et al.,* (2001) to capture the influence of foreign bank entry on domestic banks' efficiency. The model employed in this study differs slightly from the former study in that, this study focuses on profit efficiency as the dependent variable, whilst the former applies profit before tax as the dependent variable. In this study, domestic banks are banks that are legally incorporated in Ghana with at least sixty (60) percent of capital equity shares held by Ghanaians. In contrast, foreign banks are banks with at least sixty (60) percent of capital equity shares held by foreigners (Banking Act, 2004). Following Clasessens *et al.,* (2001), the model is specified as:

$$EFF_{it} = \beta_0 + \beta_1 EFF_{it\text{-}1} + \beta_2 \Delta \mathrm{FS}_{it} + \beta_3 SIZE_{it} + \beta_4 LIQD_{it} + \beta_5 CAP_{it} + \beta_6 EXP_{it} + \beta_7 HHI_{it} + \beta_8 INFL_{it} + \beta_9 GDP_{it} + \eta_{it} + \varepsilon_{it} \tag{2}$$

where,
Δ is the difference operator which helps in assessing the foreign bank entry on the efficiency of each domestic bank;

EFF is the profit efficiency for domestic banks;

FS denotes foreign banks' share of the markets;

SIZE denotes banks size;

LIQD denotes liquidity;

CAP denotes capitalization;

EXP denotes experience of a bank;

HHI denotes Herfindahl-Hirschman Index;

INFL denotes inflation rate; and

GDP denotes growth in Gross Domestic Product.

Further, β's are parameters to be estimated, η_{it} denotes bank specific effect and ε_{it} denotes the error term; i denotes individual bank at time t.

Estimation Technique

This paper employs panel regression analysis with STATA 13 as the analytical software in estimating the influence of foreign banks' entry on domestic bank efficiency. A dynamic panel data model is specified by including one-year lagged efficiency among the explanatory variables to capture the dynamic nature of profit efficiency of banks. Adjei-Frimpong *et al.,* (2014), asserts that previous level of efficiency indicates accumulation of knowledge and technological endowment that may assist banks to produce higher outputs with their inputs.

The system General Method of Moments (GMM) estimation technique is employed in estimating the dynamic panel model. The GMM technique uses lags of endogenous variables as instruments; in which the endogenous variables are pre-determined hence are not correlated with the error term. This paper utilizes the system GMM technique as opposed to the difference GMM technique. The system GMM technique as designed by Arellano and Bover (1995) and Blundell and Bond (1998) seeks to address issues of the weak instrument associated with the difference GMM technique using level equation and differenced equation. The efficiency of the equation under estimation is improved if moment conditions of its level form and the differenced forms are combined (Roodman, 2009). Lagged differences are used as instruments for endogenous variables in the level equations since these values become the suitable instruments in view of additional moment conditions. The system GMM is considered the most appropriate panel regression estimation technique due to its ability to resolve the endogeneity problem by the use of lagged values of explanatory variables as instruments and also it allows the use of level and lagged values of the variables used in the equation under estimation. Table 2 provides a summary description of variables used in the GMM regression.

Data Sources and Scope of the study

The study uses a panel model with data extracted from the end of year balance sheet statements and the annual income statements of banks. In addition, data on macroeconomic variables such as gross domestic product and inflation were culled from the World Development Indicators (WDI, 2016). Data on the annual financial reports for the selected banks is acquired from the Ghana Association of Bankers. The sample for this study is drawn from twenty seven (27) universal banks in Ghana (twelve domestic banks and fifteen foreign banks) for the period 2000 to 2015.

Table 2: Summary of variables employed in profit functions

Symbol	Variable	Definition	Measurement	Prior Expectation
		DEPENDENT VARIABLE		
EFF	EFF	Profit efficiency	Profit efficiency derived from SFA estimations.	
		BANK SPECIFIC		
β_1	FS	Foreign Share	Ratio of foreign bank assets to total bank assets	+
β_2	CAP	Capitalization ratio	Equity over total assets	+/-
β_3	SIZE	Bank size	The natural log of total assets	+
β_4	LIQD	Liquidity	Total loans to total deposits	+/-
β_5	EXP	Age	Year of incorporation	+
		INDUSTRY		
β_6	HHI	Herfindahl-Hirschman Index	Sum of squares of market shares (MS)	+
		MACRO		
β_7	INFL	Inflation	Year-to-year change in the CPI	+/-
β_8	GDP	Gross Domestic Product	The growth in GDP to measure the size of the economy	+

Source: Author's construct

Table 3: Basic results of profit efficiency for the industry

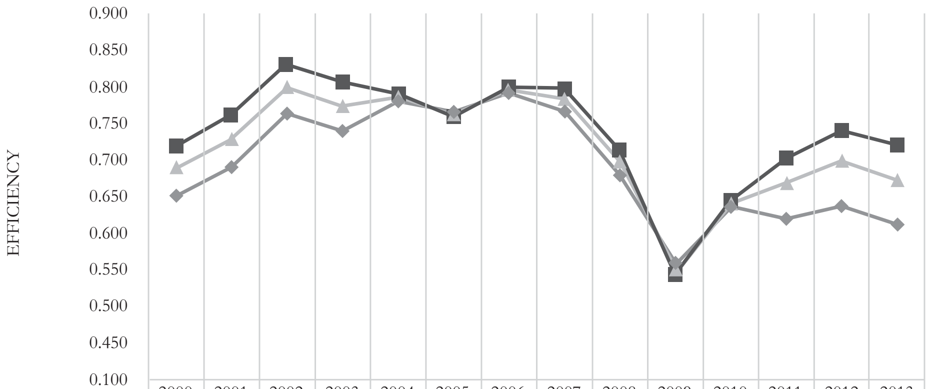
Mean	**0.71**
Standard deviation	0.17
Minimum	0.00000000658
Maximum	0.958
N	278
Log likelihood function	-170. 0245
Wald chi2(25)(Prob > chi2)	13338.480.000)
Variances: sigma_u	4.614
sigma_v	0.221

Source: Author's construct

Empirical Results

The industry results indicate a mean efficiency score of 71% for banks in Ghana. This suggests that Ghanaian banks are 71 percent efficient in generating optimal outputs. Thus, banks in Ghana incur a huge loss of 29% in employing the same level of inputs to produce outputs. Table 3 presents the basic results of profit efficiency for the banking industry in Ghana.

Figure 2 and Table 4 present a trend analysis of profit efficiency estimates for domestic and foreign banks during the period 2000-2013. The results show that foreign banks with an average profit efficiency of 73.7% are more profit efficient than domestic banks with a score of 69.2% which conforms to the global advantage hypothesis. This suggests that foreign banks are able to maximize revenue through the generation of interest income on loans and investments better than domestic banks due to the foreign banks' comparative advantage in terms of international expertise. The results of this study are in line with other studies such as Bonin *et al.,* (2005) for eleven developing nations and Kiyota (2011) for 29 countries in SSA. Similarly, the profit efficiency of domestic and foreign banks exhibit an upward and downward trend during the 2001-2008 period. The period 2011-2013 shows a consistent upward trend for foreign banks indicating an improvement in profit efficiency over time, whereas the same period indicates an undulating trend for domestic banks.



	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
DOMESTIC	0.651	0.690	0.763	0.739	0.780	0.765	0.791	0.766	0.679	0.557	0.636	0.619	0.637	0.612
FOREIGN	0.719	0.762	0.831	0.806	0.791	0.759	0.800	0.797	0.712	0.542	0.644	0.702	0.740	0.720
INDUSTRY	0.690	0.728	0.799	0.773	0.785	0.762	0.796	0.783	0.698	0.549	0.641	0.669	0.698	0.672

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Figure 2: Average SFA Profit Efficiency by Bank Ownership and year 2000-2013

Note: Average values for the period 2000-2013: domestic banks (0.692) and foreign banks (0.737).

Table 4: Profit Efficiency Estimates of Banks in Ghana

Year	Domestic Banks	Foreign Banks
	Mean	Mean
2000	0.651	0.719
2001	0.690	0.762
2002	0.763	0.831
2003	0.739	0.806
2004	0.780	0.791
2005	0.765	0.759
2006	0.791	0.800
2007	0.766	0.797
2008	0.679	0.712
2009	0.557	0.542
2010	0.636	0.644
2011	0.619	0.702
2012	0.637	0.740
2013	0.612	0.720
2000-2013	**0.692**	**0.737**

Source: Author's construct

Effect of Foreign bank entry on efficiency of Domestic banks

The second stage analysis of this paper follows the model suggested by Claessens *et al*,. (2001). This objective under this section is to examine the effect of foreign bank entry on the efficiency of domestic banks. The share of foreign banks' assets to total assets in the industry (Foreign share) is employed as a proxy to capture the effect of foreign bank entry. Foreign share, bank-specific variables, industry variables and macroeconomic variables are regressed on the profit efficiency estimates of domestic banks. Table 5 provides the descriptive statistics of variables used in the regression analysis.

Table 5: Summary Statistics of variables

Variable	Mean	Std. Dev.	Min	Max	N
EFF	0.69	0.16	6.58E-09	0.90	123
FS	0.55	0.02	0.52	0.61	123
CAP	0.12	0.06	0.00	0.39	123
SIZE	19.40	1.39	14.81	21.94	123
LIQD	0.75	0.30	0.05	1.98	123
EXP	27.33	16.12	2	60	123
HHI	0.01	0.01	0.00	0.07	123
INFL	15.30	6.75	8.73	32.91	123
GDPG	6.85	2.77	3.70	14.05	123

Source: Author's construct

Table 6 presents the empirical results of the effect of foreign bank entry on the efficiency of domestic banks. The estimated model using the GMM estimator indicates that the Wald test is highly significant at the 1% level. This suggests that overall the estimated model is good. Based on the analysis of the residuals, the White/Huber robust standard error is applied to address the presence of heteroscedasticity. As indicated earlier, the system GMM estimator is chosen over the static model (Random Effect Model and Fixed Effects Model) because some of the explanatory variables are endogenous. Hence the analysis is based on the GMM estimation in equation (3).

In relation to the GMM, the p-value of Arellano-Bond test statistics for the second order serial correlation AR (2) in the residuals fails to reject the null hypothesis of no presence of second-order autocorrelation within the error term since the p-value of AR (2) is 0.535indicating that it is insignificant. Thus, there is no second order serial correlation within the error term. Accordingly, the Hansen test of over-identification reports that the instruments used in the system GMM estimation are valid.

The results in model (3) in Table 6 indicate that foreign share (FS) has a positive and significant link with profit efficiency of domestic banks in Ghana. This implies that foreign banks tend to transfer their international expertise, quality banking services, technological knowledge and competitive pressure to domestic banks. This result is consistent with studies by Saka et al., (2012) on the Ghanaian banking industry, Karas (2010) on the Russian banking industry and Kiyota on 29 countries in SSA.

The lagged profit efficiency has a positive and significant effect on the domestic bank efficiency in the current year. This result implies that profit efficiency tends to persist from year to year and that an increase in the previous year's efficiency could help increase the current year's profit efficiency. The positive lagged profit efficiency may constitute some accumulated knowledge and technologies that may help banks to produce higher outputs. The result is in line with study by Adjei-Frimpong et al., (2014) on the banking industry in Ghana during the period 2001 to 2010.

Liquidity (LIQD) as measured as the ratio of loans and advances to deposits indicates bank's ability to meet customer's withdrawal needs. The result shows that liquidity ratio shows a negative and significant relationship with profit efficiency of domestic banks in Ghana suggesting that, domestic banks with high liquidity ratio tend to be profit inefficient. This may be due to non-performing loans arising from the increasing number of loan defaults. The negative relationship between liquidity and profit efficiency is in line with the study by Saka et al., (2012).

Inflation, has a negative, and significant effect on profit efficiency of domestic banks. This suggests that, high inflation levels resulting from a general increase in prices leads to domestic banks in Ghana being less profit-efficient. Thus, inflation leads to high cost of production which results in a decline in revenue for domestic banks.

The growth rate of GDP indicates a positive and significant association with profit efficiency. This implies that, growth in GDP in the economy of Ghana plays an essential role to the profit efficiency of domestic banks. This finding is consistent with studies by Maudos et al., (2002) and Grigorian and Manole (2006).

Table 6: Regression Results - Foreign Bank entry on Efficiency of Domestic Banks

Dependent variable	EEF	EEF	EEF
	(1) REM	(2) FEM	(3) GMM
Explanatory variables			
EFF_{t-1}			2.151**
			(0.945)
FS	0.181	0.568*	12.70*
	(0.251)	(0.282)	(7.381)
CAP	-0.130	0.600**	0.740
	(0.309)	(0.220)	(0.547)
SIZE	-0.0250*	0.108	-0.131**
	(0.0144)	(0.0704)	(0.0667)
LIQD	0.0749	0.0820	-0.139*
	(0.0486)	(0.0636)	(0.0839)
EXP	-0.00325**	-0.0591*	0.00440
	(0.00129)	(0.0279)	(0.00443)
HHI	4.769***	-1.954	9.064
	(1.457)	(2.799)	(6.440)
INFL	-0.00593***	-0.00835***	-0.00702**
	(0.00185)	(0.00159)	(0.00327)
GDPG	-0.00879	-0.00155	0.0214*
	(0.00644)	(0.00422)	(0.0130)
Constant	1.345***	0.207	1.402**
	(0.277)	(0.643)	(0.677)
Observations	122	122	111
R-squared	0.184	0.307	
Wald chi2	102.7		1543.58
Prob > chi2	0.000		0.000
Arellano–Bond [AR (2), Prob > Z]			0.535

Note: Robust Standard error in parentheses.
*, **, and *** correspond to 10%, 5% and 1% significance, respectively.

Concluding Remarks

This paper has sought to investigate the effect of the influx of foreign banks in Ghana on domestic banks. More specifically, the study first compares the efficiency level of foreign banks with that of domestic banks and second, investigates the effect of foreign bank entry on the efficiency of domestic banks in Ghana. The study applies the Stochastic Frontier Analysis (SFA) technique and the system Generalized Method of Moments (GMM) estimator on bank specific level data, spanning the period 2000 to 2015.

The results show that foreign banks with an average profit efficiency of 73.7% are more profit efficient than domestic banks with a score of 69.2% which conforms to the global advantage hypothesis. This suggests that foreign banks are able to maximize revenue through the generation of interest income on loans and investments better than domestic banks due to the foreign banks' comparative advantage in terms of international expertise. Further, the system GMM results indicate that the entry of foreign banks has contributed to the profit efficiency of domestic banks in Ghana. This positive spillover effect of foreign banks is manifested in their transfer of international expertise, technological knowledge, quality banking services and competitive pressure to domestic banks. In addition, previous year's profit efficiency, liquidity, inflation and gross domestic product are essential determinants of the profit efficiency of domestic banks in Ghana. The findings of the study imply that bank regulators in developing countries should push for reforms that eliminate implicit and explicit barriers that may hinder the entry of foreign or new banks.

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Appendix A: Annual Statistics (Mean) of Variables by Bank Ownership

Variables	Ownership	Year													
		2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Input															
Deposits	Domestic	49500000	50500000	67700000	83300000	108000000	138000000	177000000	248000000	290000000	381000000	528000000	735000000	885000000	877000000
	Foreign	55000000	1700000000	80100000	113000000	148000000	155000000	173000000	252000000	347000000	361000000	459000000	533000000	728000000	882000000
Labour	Domestic	2906976	3518528	4710644	6074728	7564646	10400000	11200000	14600000	19300000	21100000	29100000	36300000	46500000	50000000
	Foreign	1712402	2476690	3254777	4427518	5645602	7257016	7419876	11000000	15600000	16900000	22200000	22600000	32200000	40900000
Fixed Assets	Domestic	2426424	2464230	3348171	3375715	5099471	6462445	9471515	13100000	16900000	19400000	22900000	26300000	30300000	37500000
	Foreign	2547063	4080225	4717494	4797838	5765332	6467113	7228447	11100000	14300000	15600000	15200000	16400000	20200000	25900000
Output															
Loans and Advances	Domestic	33000000	41400000	33700000	49500000	65500000	89300000	126000000	206000000	294000000	324000000	354000000	401000000	577000000	630000000
	Foreign	32200000	29200000	39300000	59000000	71400000	102000000	118000000	172000000	225000000	190000000	216000000	259000000	403000000	546000000
Investments	Domestic	20900000	25800000	48400000	50600000	701226.1	51400000	57100000	56100000	64000000	79500000	149000000	237000000	309000000	343000000
	Foreign	26000000	26500000	29900000	44200000	665375.5	64900000	47700000	79500000	83000000	151000000	219000000	209000000	248000000	458000000
Other Variables															
Interest Expenses	Domestic	4870468	5234622	4341277	6488170	6704706	7123938	8352320	14100000	22600000	46800000	45600000	39300000	53800000	79300000
	Foreign	5107349	5863539	4051842	5556918	5881836	7164113	6726148	11400000	17900000	24400000	22200000	17800000	26300000	37400000
Other Operating Expenses	Domestic	2633962	2744723	3534145	4249576	5836660	7738434	9279287	12500000	16600000	19500000	25600000	36900000	41000000	42600000
	Foreign	2906865	4897912	4933125	6706130	7781306	8811098	8585222	11400000	18000000	21600000	21200000	21900000	29500000	42100000
Equity	Domestic	11100000	12900000	15500000	17100000	22400000	26900000	31500000	45900000	56200000	59400000	72100000	84600000	140000000	190000000
	Foreign	12600000	17600000	23800000	44400000	23200000	24500000	28100000	35000000	43600000	68600000	98300000	131000000	166000000	217000000
Total Assets	Domestic	78500000	95300000	122000000	149000000	175000000	200000000	260000000	364000000	494000000	571000000	740000000	938000000	1180000000	1280000000
	Foreign	90400000	91600000	119000000	160000000	209000000	234000000	246000000	372000000	477000000	543000000	644000000	747000000	1020000000	1430000000
Profit Before Tax	Domestic	52250.48	6908748	6140068	3408007	7579987	8934175	8631405	9515525	11600000	6605543	17500000	15500000	38000000	59400000
	Foreign	3055220	12800000	12000000	16400000	12900000	12000000	11500000	15000000	8714272	10100000	29000000	34500000	57700000	90800000

Savings and Investment Behaviour of Young Adults: The Role of Financial Literacy and Parental Financial Behaviour

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https://dx.doi.org/10.4314/ajmr.v27i1.5

Abstract
This study examines the savings and investment behaviour of young adults, their levels of financial literacy and ascertains whether financial literacy is an important predictor of savings and investment behaviour. Additionally, the study investigates the role of parental financial behaviour on financial literacy, savings and investment behaviour of young people. Using a survey-based approach, we collected data via a questionnaire from a sample of young undergraduate students from a large public university in Ghana. We employed the Covariance-Based Structural Equation Modelling technique to examine the hypothesized relationships of the study. The empirical results of the study based on a sample of 646 students show that financial literacy positively correlates with savings and investment behaviour of young adults. Moreover, we find parental financial behaviour to be an important predictor of the level of financial literacy of young adults and directly impacts on their savings and investment behaviour.

Key words: Household savings; investment behaviour; financial literacy; financial behaviour

Introduction

The relevance of savings and investment to the life of an individual is well established in the literature. Studies have shown that proper savings and investment culture is positively associated with financial well-being of individual households (Mandell, & Klein, 2009; Oquaye, Owusu & Bokpin, 2020; Prawitz, Garman, Sorhaindo, Neill, & Kim, 2006) and has important implications on financial independence and stability of households (Loibl, Kraybill, & DeMay, 2011). As surmised by Loibl et al. (2011), financial independence and stability of the household can be achieved only through repeated acts of savings. Indeed, beyond the individual household, savings and investment has been found to play a crucial role in the economic growth and development of a country.

The neoclassical theory of economic growth[1] for instance posits that higher rate of savings and investment impacts positively on capital formation in a country which ultimately drive economic growth performance (Solow, 1956). The argument is that individual savings and investment particularly into financial assets constitute one of the important means by which financial intermediaries raises funds to meet the funding needs of firms in a country. The efficient allocation of such funds to firms in the most productive sectors of the economy ultimately improves the productive capacity of firms which can enhance the economic growth performance of the country. This proposition has been supported empirically by extant studies that associate the ability of a country to sustain its economic growth in the long run with the savings rate and investments of individual households (Harrod, 2016; Jonubi & Abad, 2013; Loayza, Schmidt-Hebbel, & Servén, 2000).

Interestingly, despite the stream of economic benefits associated with proper savings and investment behaviour both to the individual and the country at large, household savings and investments levels continue to decline in many parts of the world particularly in developing countries. The problem is even more pronounced in Africa with many Sub-Saharan countries recording the lowest savings rate in the world on a persistent basis (Africa Renewal, 2008). Given that most governments in developing countries have also reduced their investment into social support programmes with time (Agarwalla et al., 2015), the poor savings and investment behaviour of individuals should be of grave concern to the average individual in our contemporary time. This is because as Agarwalla et al. (2015) point out the shrink in government role in terms of direct financial support leaves the future financial security of individuals entirely in their own hands.

Studies into savings and investment behaviour of individuals have therefore become relevant in our time. Academic researchers in this area have particularly been interested in examining the dominant factors that drive the savings and investment behaviour of individuals. Two broad factors (economic and non-economic factors) have been identified in the literature to be the main drivers of household savings and investment decisions. Duflo & Saez (2002) however, argue that the economic factors such as interest rate levels offer limited explanations to the savings and investment behaviour of individuals and emphasize the need for studies to investigate the effect of the non-economic factors. This study contributes to literature on the non-economic factors by investigating the effect of financial literacy on savings and investment behaviour of

[1] Commonly referred to as the Solow Growth Model

young people. In addition, we examine the role of parental financial behaviour on savings and investment behaviour of young people. We argue that parents play a critical role in the socialization process and development of children and that parental financial behaviour could be an important predictor of financial behaviour of young people.

The empirical analysis presented in this study is useful for several reasons. First, focusing on young people is particularly relevant given that while the youth are considered to be the backbone of every nation, the manner in which young people obtain the skills to become financially independent has not been the focus of most studies (Shim, Xiao, Barber, & Lyons, 2009). Second, the attempt to link parental financial behaviour to the savings and investment behaviour of their wards is also an important way of extending the literature on the determinants of savings and investment. This is so because, notwithstanding the fact that parents play an influential role in shaping the behaviour of children (Webley & Nyhus, 2006), existing studies have usually ignored the role of parental influence on the savings and investment behaviour of children. Third, despite the fact that studies on household financial behaviours exist, only a few studies (Kiiza & Pederson, 2006; Du Plessis, 2008) have provided empirical evidence to explain savings and investment behaviours from a developing country perspective. As Atkinson & Messy, (2012) point out, there are wide differences in financial behaviours within and across countries in the world and hence, the need for studies in a different context. Given the low savings and investments levels in African countries, studies from such contexts are useful in enhancing our understanding on this important subject.

The remaining sections of the paper are presented as follows: the next section reviews literature on savings and investment behaviour, financial literacy, parental financial behaviour and the predicted relationships among these key constructs of the study. This is followed by the research methodology, discussion of results followed by concluding remarks.

Literature Review

Household Savings & Investment Behaviour

The term 'Saving' has been conceptualized to mean the commitment of sacrificing current consumption to allow for accumulation of capital that will yield additional return in the future (Gersovitz, 1988). In general terms savings is a precautionary measure of setting aside current financial resources to cater for future financial obligations as a result of random and unpredictable cash inflows. Savings, therefore, serve as a safety haven for individuals most especially in situations where income is not regular and remain one of the important means of attaining long-term goals in life.

Despite its importance, empirical studies have shown that most individuals spend more money than they could actually save (Birari & Patil, 2014; Pritchard, Myers, & Cassidy, 1989). This unfortunate trend in part has been attributed to the inability stick to savings plan by most individuals rather than the ability to save per se. The resultant effect is that people who practice savings usually save below the intended amount. It has been suggested in the literature that a person's ability to delay gratification[2] and exercise some level of self-control is critical to maintaining a consistent savings plan (Webley & Nyhus, 2006). Differences, however, exist among individuals in their ability to delay gratification.

The principle of investment on the other hand is the commitment of current financial resources in order to achieve higher gains in the future. As an activity, investment is usually carried out by individuals who have savings by committing these funds into capital assets, goods and services, having an expectation of a positive return in the long run (Pandey, 2004). Typical of any investment decision is the fact that the individual concern anticipates a certain return in future upon maturity of the investment product. Deciding on which investment product to purchase should therefore be backed by sound analysis of the costs and anticipated benefits associated with the various alternatives.

While an attempt has been made to distinguish savings from investment, it is common to find the two terms being used interchangeably in the literature as the two concepts go hand in hand. compared with savings, investment decisions therefore involve a thorough estimation and careful planning in order to achieve the much-needed returns. Often, these decisions are supported by decision tools which require one to be financially literate. It is therefore expected that an individual with the right financial information will be able to make personal investment decisions which entails trying to allocate limited resources to various financial products and services that are competing for the same limited resources considering the risks and returns of the alternatives available.

Financial Literacy, Savings and Investment Behaviour

The President's Advisory Council on Financial Literacy (PACFL) in 2008 conceptualized a working definition of financial literacy as the "knowledge of basic economic and financial concepts, as well as the ability to use that knowledge and other financial skills to manage financial resources effectively for a lifetime of financial well-being" (Schwab et al., 2008). The Organisation for Economic Co-operation and Development (OECD), on the other hand, defines financial literacy as "a combination of awareness, knowledge, skill, attitude and behaviour necessary to make sound financial decisions and ultimately achieve individual financial wellbeing" (OECD, 2018, p. 4). By implication, a financially literate person is one who possesses the knowledge and skills to make sound financial decisions within the financial market. The role of financial literacy in making effective financial decisions has been well acknowledged in the literature. Generally prior studies (de Bassa Scheresberg, 2013; Huston, 2010; Perry, 2008) have found financial literacy to be an important predictor of financial outcomes including savings investment and debt behaviour.

Within the past decade significant amount of research interest has been generated on financial literacy due to its importance on financial behaviour of individuals. Most of these studies have focused on the extent of literacy and the outcomes of

[2] Being able to set aside something now in order to gain something more rewarding in the future

financial literacy among a group of people within a particular domain. Hassan *et al.* (2014), for instance, investigated the impact of financial literacy on investment decisions of UAE citizens and found a significant relationship between them. Likewise, van Rooij, Lusardi and Alessie, (2011) found financial literacy to have an effect on stock market participation. Lusardi, Mitchell & Mitchell (2011) in their study found an association between financial literacy and retirement planning. With respect to portfolio diversification, Guiso & Jappelli, (2008) found measures of financial literacy to be highly correlated with the degree of portfolio diversification. Several other studies (Hastings & Tejeda-Ashton, 2008; van Rooij, Lusardi & Alessie, 2011; Hilgert *et. al*, 2003) also demonstrate that financial literacy affects an individual's ability to plan for retirement, manage and amass wealth, be involved in investment activities such as stock market participation and manage debt efficiently.

Notwithstanding the surge in research interest on financial literacy over the years, researchers have employed different scales in measuring the concept and the appear not to be a consensus to date. Proxies such as scores on knowledge level and experience from positive and negative financial behaviours have been used as measures of financial literacy (Oseifuah, 2010). This study employs the financial orientation (ORTOFIN) scale developed by Loix *et al.* (2005). This scale conceptualizes financial literacy as an individual's disposition towards finances characterized by personal interests and skills related to managing one's own finances effectively.

While the relevance of financial literacy on financial behaviour of individuals is widely acknowledged in the literature, the financial behaviour of parents has been cited to be particularly relevant for the financial behaviour of young people. The argument is that, through the socialization process, young people adopt their financial behaviour from their parents. The next section discusses the role of parental influence on financial behaviour of their wards.

Role of Parental Financial Behaviour on Financial Behaviour of Children

It has been argued that current financial behaviour of an individual is usually a reflection of past exposure and generally has implications on future behaviour. Shim, Barber, Card, Xiao, & Serido, (2010) for instance, point out that the present financial behaviour of an individual in transition to adulthood has implications on his/her financial behaviour throughout adulthood stage. According to Drever *et al.* (2015) young people in making effective financial decisions such as managing resources, depend on earlier encounters they have experienced throughout life especially through the cognitive and conscious foundation laid by parents. Thus, despite the fact that behaviour is known to be an ever-changing phenomenon, there is a widely accepted notion that "past behaviour is the best predictor of future behaviour" (Ajzen, 1991, p. 201).This notion largely underscores the important role that parents play in the development process of their children. As an important agent in the socialization process of children, parental behaviour in all aspects of life including financials to a large extent affect the life of their children. This is because children tend to model their financial behaviour after their parents. In transitioning to become an adult, Schoeni & Ross (2005) indicate that that the youth rely more on the financial backing from their parents.

As argued by Gudmunson & Danes (2011), while the formal means of learning plays a major role in influencing the behaviour of young people, it is also established that young people learn a lot through observation and imitation of older folks. This presupposes that the kind of financial behaviour their parents exhibit will indirectly affect their own financial behaviour as they grow. Financial behaviour refers to any human behaviour that is relevant to money management and include cash, credit, investment and saving behaviour. It covers a host of activities including savings, investment, debt management, retirement planning, insurance and the like.

Empirically, Webley & Nyhus (2006) report that parental financial behaviour and financial orientation have a positive impact on current and future financial behaviour of their children. Again, Pinto (2005) examines credit cards usage among young adults and conclude that most young people learn more from parents than any other agent of socialization as far as credit card use is concern. According to Bernheim, Garrett & Maki (2001) parents who encourage their children to save at a tender age using a bank account tend to save more than other individuals during adulthood. Similarly, Gudmunson & Danes (2011) investigate the role of parental behaviour on financial literacy of children and conclude that parents play an influential role in the development of financial knowledge and skills of children.

The above findings from existing studies point to the fact that parents play a crucial role in shaping the financial behaviour of their wards. Over the years, financial management discourse among the youth have found parents to be the first source of external influence in shaping the financial attitudes and behaviours of the youth and are widely known to be the prime agents of financial socialization (Clarke, Heaton, Israelsen, & Eggett, 2005).

Financial socialization refers to the series of activities that involve attaining and developing attitudes, values, knowledge and behaviours that improve the financial well-being of a person (Danes, 1994). Financial socialization process occurs through experience, beliefs, values, skills provided within a family setting. The family setting is an environment that breeds the initiations of rules and guidelines that shape behaviour and influence financial decision issues. Irrespective of the fact that socializations occur throughout life, the early stages in life of an individual is generally considered to be a key socialization period (Shim et al., 2010).

Methodology

Data collection technique, research instrument and measurement of constructs

The data for the study was collected from students pursuing undergraduate courses at University of Ghana Business School (UGBS). The questionnaires were administered during class sessions to afford every student present in class an equal chance of voluntary participation in the study. The questionnaire was divided into two sections. The first part focused on the demographic features of the respondent, including their age, gender, level of study etc.

whilst the second component of the questionnaire focused on the main constructs of the study: savings, investment behaviour, financial literacy and parental financial behaviour. The constructs 'savings planning', investment behaviour and parental financial were each measured with a 7-item scale developed by Kehiaian (2012). The construct financial literacy was operationalized using the orientation towards finances scale (ORTOFIN) developed by Loix et al. (2005). These instruments have previously been validated by other studies.

The indicators of each construct were measured on a 7-point Likert scale with 1 being strongly disagree and 7 strongly agree. While a 5-point Likert scale is often employed in most social science research, a 7-point Likert scale gives a wider range of likely responses helpful in getting variability in responses and thereby avoiding responses being cluttered at the extreme ends (Lee & Lings, 2008).

Data analysis

The data collected was first analyzed using descriptive statistics and subsequently using inferential statistics. The descriptive analysis was done in Statistical Package for the Social Sciences (SPSS), where a numeric presentation of the features of the respondents and the sample data was generated in a table form. Subsequently, the study employed the Structural Equation Modelling (SEM) technique, specifically, The Co-Variance Based Structural Equation Modelling (CB-SEM) technique to examine the predicted relationships among the study constructs.

SEM enables researchers to evaluate measurement models and structural paths more efficiently and provides a platform for effective evaluation of the overall fitness of the study model and structural paths among constructs (Hair et al., 2012). SEM is particularly useful in assessing measurement models and structural paths involving multiple dependent variables and latent construct with multi-item indicator variables. The Co-Variance Based SEM was employed for this study using version 21 of the Analysis of Moment Structures (AMOS) software. The study follows a two-step approach: measurement model and structural model as employed in prior studies (Hanafizadeh *et al.,* 2014).

Measurement Model

In assessing the measurement model, the indicators of each construct were initially subjected to a Confirmatory Factor Analysis (CFA) to determine the appropriateness of the indicators of the various constructs for inclusion in the structural model analysis. Based on the CFA results as shown in Table 1, three indicators of financial literacy were excluded from the analysis as they recorded factor loadings below the recommended threshold of 0.5. Two indicators of savings planning and one indicator of parental financial behaviour equally loaded poorly and as such were also excluded from the final analysis. Next, the overall fitness of the model was assessed by relying on the fit indices: RMSEA, TLI, CFI, TLI, NFI, and CMIN/df as recommended by Byrne (2001). Results from this analysis as presented in Table 2 demonstrate that all the fit indexes used for the study met the specific thresholds recommended in existing studies.

Table 1: Confirmatory Factor Analysis

Construct	Factor Loadings	AVE	CR	CA
Financial Literacy		**0.72**	**0.83**	**0.85**
I accurately plan my expenses	0.85			
I keep track of general economic trends	0.87			
I like to plan things	0.70			
Investment Behavior		**0.54**	**0.78**	**0.89**
I have invested money into at least one investment with more risks than a savings account	0.58			
I use the principle of present and future value in my investment calculations	0.79			
I use the concept of dollar cost averaging in my investment planning	0.66			
I use the power of diversification in my investment planning	0.83			
I use the calculated risks in my investing strategies	0.82			
I use the principle of risk vs. return	0.80			
I feel comfortable investing my monies	0.63			
Parental Financial Behavior		**0.76**	**0.93**	**0.82**
My parents budgeted on paper	0.56			
My parents saved for emergencies	0.84			
My parents made prudent financial choices	0.83			
My parents invested some of their assets into stocks	0.52			
My parents taught me good spending habits	0.68			
My parents paid off their debts within the repayment scheduled plan	0.53			
Savings Planning		**0.55**	**0.71**	**0.76**
I save money before paying my routine expenses such as airtime, food, bills etc.	0.52			
I use electronic deposit from my income to fund savings account	0.58			
I normally have at least three months gross income in an emergency fund	0.74			
I have a maintenance fund for repairs and other periodic expenses	0.74			
My average balance in my savings account normally goes up	0.67			

Legend: AVE = Average Variance Extracted; CR = composite reliability; CA = Cronbach Alpha.

Table 2: Model fit indices for measurement model

Fit Indices	Accepted Values	Model Results	Remarks
Parsimony Normed Fit Index (PNFI)	> 0.5 (Mulaik et al., 1989)	0.78	Good
Root Mean Square of Approximation (RMSEA)	< 0.08 (Byrne, 2001)	0.06	Good
Tucker Lewis Index (TLI)	> .90 (Bentler and Bonett, 1980)	0.92	Good
Comparative Fit Index (CFI)	> 0 .90 (Bentler, 1990)	0.93	Good
Goodness of fit Index (GFI)	> 0.90 (Chau, 1997)	0.91	Good
CMIN/DF	< 5.0 (Bentler, 1990)	3.35	Good

Reliability and Validity

Tests for reliability of the constructs were conducted using the composite reliability (CR) and Cronbach Alpha (CA) scores. As shown in Table 1, the CR and CA scores for each constructs are between 0.71 and 0.93 which satisfy the recommended benchmark of 0.7 and above (Fornell & David, 1981; Nunally, 1979). Validity of the constructs was assessed using the Convergent and Discriminant validity tests. Convergent validity was assessed using the Average Variance Extracted (AVE) whilst the discriminant validity test was conducted using the Fornell Lacker criterion which compares the squared inter-correlation co-efficient with the AVE. An AVE of 0.5 and above is deemed appropriate for convergent validity and the AVE score for each construct must be higher than the squared inter-correlation co-efficient for discriminant validity to be assured (Fornell & David, 1981). The AVE values for the constructs as shown in Table 1 ranges from 0.54 to 0.76, which is within the acceptable threshold. Results of the Fornell Lacker test as shown in Table 3 also demonstrate that discriminant validity is assured.

Table 3: Correlation and Correlation square matrix of latent variables

	FO	IB	PFB	SP
FO	1	0.13	0.14	0.12
IB	0.36	1	0.04	0.25
PFB	0.38	0.21	1	0.14
SP	0.35	0.50	0.37	1

NB: Values above the diagonal are squared correlations

Results

Profile of the respondents

The target population was business students pursuing undergraduate courses at University of Ghana Business School (UGBS). UGBS is an interdisciplinary faculty within the College of Humanities, University of Ghana, with six departments: Accounting, Finance, Marketing, Human Resource, Public Administration and Health Service Management. It is a traditional aged public institution, Ghana's largest and premier business school which serves as mentoring institution for several private universities in Ghana. A total of 700 questionnaires were administered to the respondents during classroom sessions. Out of this number, 646 valid responses were used for data analysis purposes.

Table 4 presents the demographic attributes of the respondents. More of the respondents were males than females. A little over half (53%) of the respondents were males with the rest being females. The population is largely youthful as close to 90% of the students were within the age bracket of 21-25. With regards to having a form of training in Finance, majority of the respondent group (63.9%) indicated that they had received some form of education in Finance. Also, Final Year students constituted a larger proportion of the respondent group (33.1%), with majority of the students (49.1%) majoring in Accounting and Finance.

Table 4: Profile of the Respondents

Measure	Item	Frequency	Percentage (%)
Gender	Male	342	52.9
	Female	304	47.1
Age	17-20	16	2.5
	21-25	577	89.3
	26-30	42	6.5
	31-35	11	1.7
Training in Finance	Yes	413	63.9
	No	233	36.1
Major	Accounting	321	49.7
	Finance	164	25.4
	Human Resource	53	8.2
	Public Administration & Health Services Management	49	7.6
	Marketing	59	9.1
Level	First Year	142	30.6
	Second Year	190	29.4
	Third Year	100	15.5
	Final Year	214	33.1

Descriptive Statistics on Constructs

An analysis of the respondents' views on the various constructs for the study is presented in Table 5. Financial literacy recorded an overall mean of 4.47. All indicators within the constructs had means above 5.0. This gives an indication that on average, the respondent group possesses high literacy levels in financial issues. Investment behaviour, on the other hand had an overall mean of 4.02. By implication, the respondent group exhibit sound investment behaviours. Moreover, parental financial behaviour scored highly with an overall score of 4.65. This gives an indication that parents of the respondent group maintain good financial behaviour. Finally, savings planning recorded an overall mean 3.45 with all indicators recording a mean score above 3.0. Impliedly, majority of the respondents appear to have a good savings plan. The skewness and the kurtosis statistics indicate the values of all constructs are within the range of +2 and -2 implying that data for the constructs are generally normally distributed (Gravetter & Wallnau, 2014).

Table 5: Mean, Standard Deviation, Kurtosis and Skewness Statistics

Construct	Mean	Standard Deviation	Kurtosis	Skewness
Financial Literacy	**4.47**			
I never read the financial pages of my newsletter/newspaper	3.34	1.81	0.42	-0.80
I try to keep track of general economic trends	4.54	1.69	-0.33	-0.71
I am not attracted to the financial part of my life	2.50	1.91	1.12	-0.70
I regularly look for interesting investment opportunities for my money	4.89	1.79	-0.55	-0.74
I am interested in the evolution of currency rates	4.77	1.73	-0.48	-0.64
I accurately plan my expenses	5.14	1.68	1.21	-1.32
I keep track of general economic trends	4.89	1.63	-0.50	-0.52
I like to plan things	5.70	1.53	-0.27	-0.74
Investment Behaviour	**4.02**			
I have invested money into at least one investment with more risks than a savings account	3.96	2.26	-1.48	0.02
I use the principle of present and future value in my investment calculations	4.14	1.91	-1.10	-0.11
I use the concept of dollar cost averaging in my investment planning	3.35	1.75	-0.74	0.35
I use the power of diversification in my investment planning	3.84	1.87	-1.03	0.01
I use the calculated risks in my investing strategies	4.02	1.84	-0.98	-0.13
I use the principle of risk vs. return	4.10	1.89	-1.02	-0.17
I feel comfortable investing my monies	4.75	1.79	-0.65	-0.51
Parental Financial Behavior	**4.65**			
My parents budgeted on paper	3.88	1.94	-1.15	-0.02
My parents saved for emergencies	5.12	1.78	-0.45	-0.76
My parents made prudent financial choices	5.12	1.71	-0.15	-0.16
My parents invested some of their assets into stocks	4.14	2.06	-1.24	-0.89
My parents taught me good spending habits	5.25	1.73	-0.08	0.02
My parents paid off their mortgage/loans prior to retiring.	4.22	2.08	-0.19	-1.20
My parents paid off their debts within the repayment scheduled plan	4.83	1.98	-0.83	-0.11
Savings Planning	**3.45**			
I save because my budget shows a positive disposable income	3.91	1.67	-0.31	-0.80
I save money before paying my routine expenses such as airtime, food, bills etc.	3.90	1.67	-1.48	-0.24
I use electronic deposit from my income to fund savings account	3.40	1.65	-1.10	0.03

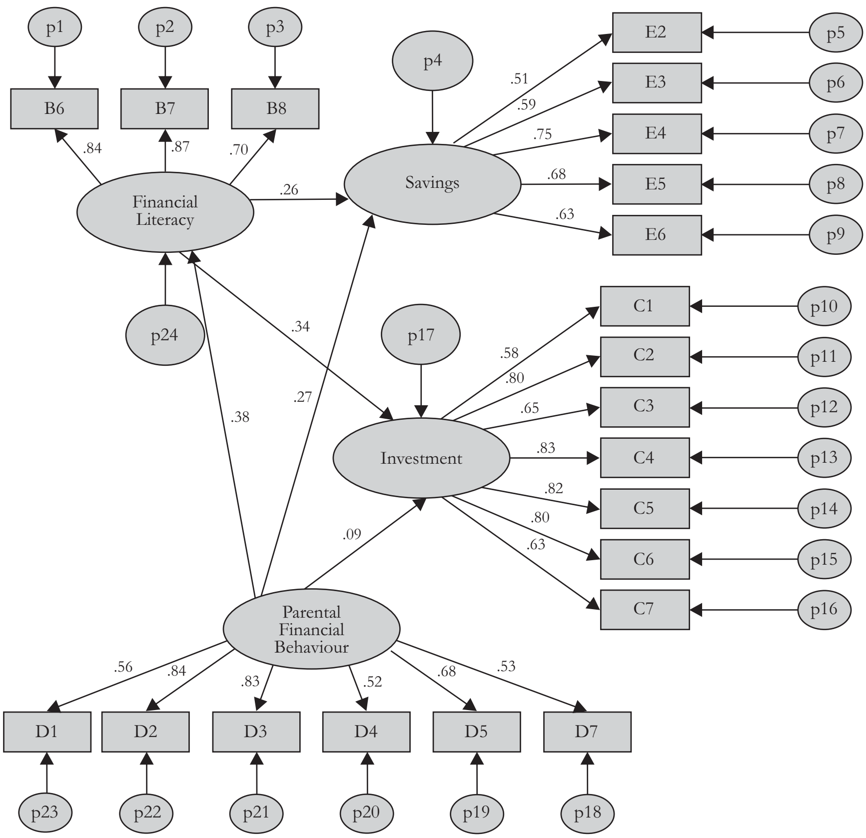
Table 5: Mean, Standard Deviation, Kurtosis and Skewness Statistics

Construct	Mean	Standard Deviation	Kurtosis	Skewness
I normally have at least three months gross income in an emergency fund	3.14	1.56	-0.74	0.19
I have a maintenance fund for repairs and other periodic expenses	3.30	1.63	-1.03	0.10
My average balance in my savings account normally goes up	3.90	1.52	-0.98	-0.23
I live for today not tomorrow	2.59	1.75	0.72	-0.77

Structural model results

Having confirmed the model fitness, reliability and validity of the constructs, the causal relationships between the exogenous and endogenous constructs based on the framework of the study as demonstrated in Figure 1 was ascertained. Results from the test suggest that Financial Literacy has a positive influence on savings (β=0.26, p-value=0.000). Likewise, Finan-

Figure 1: Path Diagram



cial Literacy has positively related to investment (β=0.34, p-value=0.000). Parental Financial Behaviour has a positive association with savings (β=0.27, p-value=0.000) and investment (β=0.09, p-value=0.05). Also, Parental Financial Beha-viour is positively linked to financial literacy (β=0.38, p-value=0.000).

Table 6: Standard coefficients and significance values for hypotheses

Hypothesis	Path	Standard Co-efficient	P Value	Result
H1	Financial Literacy → Savings Planning	0.26	***	Accepted
H2	Financial Literacy → Investment Behavior	0.34	***	Accepted
H3	Parental Financial Behavior → Savings Behavior	0.27	***	Accepted
H4	Parental Financial Behavior → Investment Behavior	0.09	0.05	Accepted
H5	Parental Financial Behavior → Financial Literacy	0.38	***	Accepted

NB: *** = P Value < 0.01

Discussion of results

The current study examined the impact of financial literacy and parental financial behaviour on the savings and investment behaviour of young adults. The study further explored whether the financial literacy level of young adults is in any way influenced by parental financial behaviour. In line with the prediction of the study, financial literacy was found to be positively related to both savings and investment behaviour of the respondents. By implication, individuals who are financially proficient in knowledge and skills have good savings plan and positive disposition towards investment. Existing studies (Lusardi, 2008b; Mandell & Klein, 2009; Murendo & Mutsonziwa, 2017) have affirmed the existence of a positive relationship between financial literacy and savings behaviour. Murendo & Mutsonziwa (2017) in particular document using data from a developing country setting that financial literacy increases the likelihood to save through both formal and informal savings mechanisms. Thus, in the context of developing economies financial literacy do not only affect the savings behaviour of individuals in the formal sector (who are usually in the minority) but also matters for the majority of individuals in the informal space who use informal savings portfolios.

Similarly, our finding of a positive relationship between financial literacy and investment behaviour is an indication that financially literate individuals tend to engage more in responsible investment behaviour than their peers. As explained by Grohmann, Kouwenberg, & Menkhoff (2015) financial literacy increases significantly the chances of an individual investing in an investment product. Reference to stock market investment, Yoong (2011) for instance confirms that individuals with some degree of knowledge in financial matters are more likely to invest in stocks and mutual funds. Several empirical studies (Balloch, Nicolae, & Philip, 2015; Hastings & Tejeda-Ashton, 2008) generally support the assertion that financial literacy positively correlates with responsible investment behaviour. Taken together, our results suggest that an important way of promoting savings and investment habit among individuals is to enhance their levels of financial literacy. Policy initiatives meant to enhance literacy rates are therefore important in shaping the financial decisions of individuals.

The effect of parental financial behaviour on our variables of interest also yielded very satisfactory results. We observe from the results that parental financial behaviour has a positive effect on the financial literacy. This finding underscores the relevance of parental behaviour on the financial life of their wards. The ability of young people to appreciate financial concepts, plan their finances, the capacity to understand financial services and products in part could be linked with the exposure at home. Thus, the actions and inactions of parents play a crucial role in nurturing the financial knowledge and skills of their children. Being financially literate is therefore not obtained through the formal education system alone but could be developed informally through the socialization process. This finding is consistent with results from existing studies that associate parental financial behaviour with financial knowledge of their wards (Jorgensen & Savla, 2010; Shim et al., 2010).

Lastly, we also find parental financial behaviour to be positively associated with both savings and investments behaviour of young adult. This implies that parental financial behaviour can influence the savings and investment decisions of their children both positively and negatively. Parents who exhibit good financial behaviour at home are more likely to influence their kids to be financially responsible when they become adults. While Grohmann et al. (2015) associate parental teaching for instance to be indirectly related to investment behaviour, our findings suggest the existence of a direct relationship between the two constructs. This finding is in line with other existing studies (Cude *et al.*, 2006; Hira, Sabri & Loibl, 2013; Webley & Nyhus, 2006) that conclude that parental financial behaviour is an important predictor of savings and investment decisions of individuals.

Conclusion

In this paper we examine the savings and investment behaviour of young adults, their levels of financial literacy and ascertain whether financial literacy is an important predictor of savings and investment behaviour. We further examine the role of parental financial behaviour on financial literacy, savings and investment behaviour of young people. The evidence from our structural model analysis suggests that, parental financial behaviour has a positive influence on financial literacy, savings and investment behaviour of young people. Moreover, financial literacy is also observed to be a good predictor of the savings and investment behaviour of young people.

Given the increasing levels of debt among the youthful population across the globe coupled with the low savings and poor investment attitude among the youth, this study attempts to share some perspective on the factors that promote responsible savings and investment behaviour. In particular, we examine the effect of some non-economic factors (financial literacy and parental financial behaviour) on the savings and investment behaviours unlike most existing studies that focused predominantly on the influence of economic factors. The evidence provided in this study is important to policy makers interested in promoting savings and investment behaviour among its people, especially those from developing countries where savings and investment culture is poor. Based on the results of the study, we argue that an important way of encouraging people to save and invest at an early stage in life is to enhance their literacy levels in financial matters.

Given that the level of financial literacy in most developing countries is generally low, intervention policies such as financial educational campaigns could be implemented on a national scale to promote proper financial behaviour (such as savings and investment) among the youth. Besides formal intervention strategies such as financial educational campaigns, results of this study also demonstrate that the level of financial literacy younger folks could be enhanced through informal mechanisms such as parental behaviour. The findings of this study are therefore useful not to policy makers on the national stage alone but also to parents interested in securing the financial wellbeing of their children. As the results demonstrate the financial behaviour of parents plays a critical role in shaping the financial behaviour of their children. The results thus, emphasize the need for parents to recognize that they play a critical role in the financial socialization process of their wards. An important way of securing the financial future of children will be for parents to practice proper financial behaviour at home for their wards to emulate.

While these results provide some useful insights into the savings and investment behaviour of young people and the predictors of such behaviours, the sample used for the study though large was localized to one university and this may limit the extent of generalization. Again, the study considered the effect of only two non-economic factors: financial literacy and parental financial behaviour on savings and investment behaviour. These limitations provide important avenues for future studies.

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Regime Switching in Sub-Saharan Frontier Equity Markets - A Case Study of the Ghana Stock Exchange Index

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https://dx.doi.org/10.4314/ajmr.v27i1.6

Abstract
We investigated regime switching behaviour of the broad aggregate returns of the Ghana Stock Exchange within the context of frontier markets. The data covered the daily period from January 04, 2011 to March 31, 2017. We made the following findings: (a) there are clear market regimes corresponding to periods of tranquillity and turbulence as demonstrated by the vastly different unconditional volatilities associated with the low and high regimes in the data (b) contrary to investor beliefs, frontier markets are less risky than reported in the popular press and (c) the returns from frontier markets are positively skewed. The regime switching model employed was compared to the workhorse GARCH(1,1) model used for volatility estimation in finance using the Deviance Information Criteria. In our findings, the MS-GARCH performed better than the GARCH(1,1), confirming recent studies in volatility modeling. The implications of these findings for trading strategies, investment and portfolio choices and risk management have been highlighted. For policymakers this study will provide a counter argument for granting tax exemptions to global investors on the basis of perceived elevated risk in frontier markets.

Keywords: Regime-switching, frontier markets, Markov Switching-GARCH, transition matrix, global investors

Introduction

Volatility is a very important measure in financial markets. It is ever present in investment and portfolio management, pricing of financial instruments, trading and financial risk management. Investors have long known that different market conditions affect the returns on investments in financial markets. Trading strategies perform differently under different market conditions. In highly volatile markets where asset prices are falling, for example, investors tend to adopt bearish strategies like shorting assets to profit from falling asset prices and hedging their trades using derivative instruments. Knowing when to adopt a particular strategy is seen as a competitive strategy in today's markets.

Nowhere are these market conditions more pronounced than in a country's equity market that is highly influenced by the underlying macroeconomic, political and social developments. The business cycles of a country are closely mirrored in the behaviour of the financial markets. Investors face a lot of uncertainty when they trade in the financial markets across all assets classes. These uncertainties can be the result of the state of the economy, corporate announcements, political upheavals or investor psychology with respect to the processing of news. Danielsson (2002) made the remarkable observation that "market data is endogenous to market behavior. . ." (pg. 1). And market behaviour in turn is informed by risk drivers in the underlying economy. Thus, any attempts at modelling volatility must of necessity take account of these developments in a given economy.

Conditional volatility varies across time but it is essentially state dependent. During periods of economic expansions, firms and businesses are buoyed by the general rise in productivity which boosts further investment in production capacity. This boosts activity in their stocks and dampens the volatility associated with trading in their equities. On the contrary, recessions dampen business activity typically with low employment of productive resources (Roberts & Tybout, 1997). Demand for firm products tend to be generally low. Debt to equity mix of the capital structure of firms becomes high as a result of low profitability in a slowing economy (Tang & Yan, 2010). In this state, firms become highly leveraged and this spooks investors into selling their holdings thereby increasing market volatility. Exogenous shocks characterised by a departure from a low to a higher regime reflects investor nervousness in the stock markets. Macroeconomic volatility, geopolitical events, local conflicts, foreign exchange crisis, fall in world commodity prices and pending national elections are frequent events that spook investors to rethink their strategies particularly in frontier equity markets (Aggarwal, Inclan, & Leal, 1999).

Globally, the financial crisis of 2008 is an example of an event that led to extreme volatility in markets across all assets. The massive sell off it unleashed subsequently led to extreme volatile trading sessions in the developed and some emerging markets across the globe. It was not until central banks of the developed world intervened through a combination of ultra-low interest rates and other unconventional monetary policies were the markets restored to normalcy. In the light of these events in the developed and much of the emerging markets, investors are allocating substantial investment funds to hitherto unknown markets (Chan-Lau, 2012). As investors pour into frontier markets assets, however, there is still a perception of above average risks in these markets. The motivation for this article, therefore, is to provide a characterisation of risk using Markov regime switching in sub-Saharan African frontier markets using the Ghana Stock Exchange as typical of such markets. A clearer and somewhat better appreciation of the evolution of time-varying volatility is achieved by looking at volatility within regimes which are associated with the state of the economy instead of assuming a single regime in the data. We thus investigate in this paper the existence of regimes in the Ghanaian equity markets using the Markov regime switching and show how the model tracks the time-varying volatility regime-by-regime as opposed to conventional GARCH(1,1) models which assume a uniform time dependent heteroscedastic evolution.

The paper uses the daily returns of the Ghana Stock Exchange Index (GSEI) spanning January 04, 2011 to March 31, 2017 for the analysis. Fragile institutions and systems and lack of long term policy planning in typical frontier economies mean policy can change suddenly. So we model the change as an unobserved stochastic process using Markov regime switching. We found that the Markov regime switching model characterise volatility of frontier markets and outperformed the conventional GARCH(1,1), a generally accepted workhorse of volatility models in finance (Engle, 1982). We reached this conclusion through a comparison of their Deviance Information Criteria (DIC), a more conservative model selection criterion. Another important finding is the positive leptokurtic returns of the aggregate market in frontier markets. This contrasts findings in the developed markets where aggregate market returns tend to be negatively skewed. Finally, our research reveals that equities in frontier markets are less volatile than previously thought. This finding should spur further investments in equities of the frontier markets.

The paper is novel in many ways. It is the first, to be best of our knowledge of the literature, to estimate the volatility of returns in sub-Saharan African frontier market using a regime switching model. There are lots of papers on regime switching involving different asset classes. However, all these are centred on developed and emerging markets. Again this paper unlike similar ones in this track of volatility research in emerging and frontier markets, for example Haque et al. (2004) and Gomes and Chaibi (2014) with the latter focusing specifically in equity markets in the MSCI Frontier Index, accounts for the effects of asynchronous and thin trading on market returns. Our work also fills an important knowledge gap in the frontier equity markets literature in taking into consideration the various states of the economy in modeling the volatility of stock market returns using the Ghanaian equity market as representative of frontier economies. Global investors are wary of investing in frontier equity because of the perceived risks that lurk in these markets. This is due in part to lack of research and understanding of these markets. With this research, investors are better positioned to make the right trading and investment decisions based on an understanding of the risk dynamics in the frontier markets. The findings are generic enough to be applicable to frontier equity markets within Sub-Saharan Africa (SSA). Finally, the paper showed that Markov switching is the appropriate model for modeling and forecasting volatility on frontier equity markets. It achieves this by incorporating the nonlinear characteristics of the returns in the analysis using a two-stage analysis of maximum likelihood and Markov Chain Monte Carlo estimation to get around the problems of path-dependency of regime switching models.

The rest of the paper is organised as folows. Section two is a review of the literature consisting of the developments in the use of regime switching in the equities, foreign exchange and commodities markets in the developed and emerging markets. Here we provide a formal definition of "frontier markets", discuss their characteristics and role in global investment portfolios, survey the risks of investing and how to properly characterise the volatility associated with market returns in frontier markets. Section three looks at the Markov regime switching model specification. The analysis and results of the market data takes place in section four. Section five looks at the implications for investors and policymakers. Finally, section six concludes with implications for investments and policymakers.

Literature Review

Frontier Markets: Definition, Characteristics and Investment Opportunities

Girard and Sinha (2008) identified frontier markets as a group of less known, less accessible, small, and illiquid markets which are less researched. Indeed the practitioner literature is replete with studies on investment strategies in the frontier markets compared to the academic literature. The term "frontier markets" was originally coined in 1992 by the International Finance Corporation (IFC), a private financing arm of the World Bank and a leading investor in frontier market assets. It is a term the IFC used to describe markets consisting of a subset of very small emerging markets with lower market capitalization, less open and less liquidity compared to the more developed and emerging markets. Speidell and Krohne (2007) reflects on the fact that many investors perceive frontier markets "as being in decline, ravaged by wars, disease, famine, and authoritarian governments. . . " (p. 1), a view they attribute to media reports rather than reality. Being less known to investors, frontier markets are laden with opportunities of making decent returns on investments because they are less crowded. Again, frontier markets are almost synonymous with countries with attractive economic fundamentals, lower volatility contrary to what is perceived, attractive valuation of investable assets, opportunities for diversification as a result of low correlations with developed and emerging market assets and favourable demographics. Indeed frontier markets have found themselves in global indices used by the investing community. Notable among them are the S&P Frontier BMI Index, MSCI Frontier Market Index, Russell Frontier Index and the FTSE Frontier Market Index among others (Sukumaran, Gupta, & Jithendranathan, 2015).

Frontier markets as an asset class has been noted to providing an important diversification as a result of their low correlation with the returns of markets of the emerging and developed countries (Berger, Pukthuanthong, & Yang, 2011). Returns from much of the developed countries have sagged for more than a decade now. Yields have dropped precipitously following the coordinated ultra-low and sometimes negative interest rate regimes instituted by the monetary authorities in the developed countries. However, frontier markets are perceived to be fraught with risks that can surprise investors quickly. Markets are prone to sudden market sell-offs, tightening of regulations for expatriation of profits by foreign firms, political upheaval and currency crises (Hassan, Maroney, El-Sady, & Telfah, 2003). These cycles of volatility regimes are best captured with a regime switching volatility model.

Frontier Market Risks

Sources of risks in equity markets in frontier markets have been highlighted extensively in the practitioner literature. Foremost on the minds of investors is political instability, civil unrest and their disruptive effects on the markets. Conflicts affect every facet of the economy. The narrative on most SSA countries is that of military take-overs, civil strife and outright civil wars. Countries from Mali through Cote d'Ivoire, Nigeria to Zimbabwe have experienced some form of civil disruption or social unrest over the last decade. Zimbabwe had the largest and most thriving stock market in SSA excluding South Africa. Inconsistent government policies including massive currency devaluations triggered by the land reforms scared away investors from the Harare Stock Exchange leading to considerable reduction in total market capitalisation of the stock market. Recent events in Cote d'Ivoire provides important lessons on the devastating effects on a country's financial markets during conflicts. This has been documented extensively in Klapper, Richmond and Tran (2013) and Salami (2016).

Low market liquidity has been identified as an obstacle to the smooth functioning of frontier equity markets. Gueye et al. (2014) identified lack of liquidity as the main reason why investors demand high returns in frontier markets in Sub-Saharan Africa. Lack of liquidity is reflected in thin trading and high transaction costs. Illiquidity continues to be a problem as noted in Hoekman, Senbet and Simbanegavi (2017). Liquidity affects the ability to undertake large trades. Low trading volumes are cost inefficient. Funds buying or selling large orders have problems in trade execution. In the end they pay more to buy or receive less to sell. This affects their returns on investment. It also affects the expansion of these markets and types of financial instruments that can be found in them. Loukil et al. (2010) found evidence that this impacts investor returns in the Tunisian equity market. Generally, listed companies are very small compared with emerging markets and total market capitalisation compared with the gross domestic product of the countries is very low.

Of greater concern to global investors is the regulatory framework in the frontier markets. Changing or uncertain regulatory framework constrains investment decision-making. A lack of strong institutions in frontier markets means unanticipated changes in regulations guiding margin trading, transaction fees, commissions on trades, capital control and taxes. These rules change arbitrarily with personalities at the helm of affairs of the market regulatory institutions. As a result, investors for the most part adopt a wait-and-see attitude whenever there is an impending election or proposed change of personalities in charge of market related regulatory institutions. Following an earlier work by Dupasquier and Osakwe (2006) and Dahou, Omar and Pfister (2009), Anyawu (2012) found that regulatory uncertainty is one of the risks cited by global investors coming to Africa. Isimbabi (1997) writing two decades ago summarised the situation, thus ". . . the destabilizing effects of introducing stock markets into economies with underdeveloped legal, regulatory, and monetary systems can produce economic instability that outweighs potential gains" (p. 142).

Measuring Frontier Market Volatility

Equities exhibit regime-switching behaviour in all markets across different asset classes. This corresponds to times of high and low volatility usually associated with bear and bull market periods respectively. In some asset markets, this change can represent blips in trading especially when markets are choppy. In others, still, the change can be temporary extending to several trading weeks or months while in most severe cases it can be a permanent structural shift in the dynamics of the markets.

Numerous time series approaches have been proposed in the financial econometrics literature to model this behaviour. In particular, the work on Markov regime switching behaviour was laid in the seminal works of Hamilton (1989; 1990) and later developed into Markov-switching GARCH (MS-GARCH) by (Hamilton & Susmel, 1994) in the context of equity markets. Subsequent to that, regime switching literature in finance and economics has exploded over the years. Researchers have used this concept in all areas in finance. Markov regime switching models are a generalisation of the generalised autoregressive conditional heteroskedastic (GARCH) model of Bollerslev (1986). They are an extension of the GARCH to the nonlinear paradigm, able to capture the properties of volatility within each regime found in the data by allowing the GARCH parameters or coefficients to vary flexibly across each state of the world. In a way, MS-GARCH models are like piecewise polynomial nonlinear GARCH models approximating the state of each regime.

Hamilton and Lin (1996) presented evidence of volatility varying with the business cycle. Numerous studies, for example, Bauwens et al. (2014) and Lamoureux and Lastrapes (1990) reported that volatility predictions made by classical GARCH-type models fail to capture the true variations in volatility in nonlinear time series with regime changes. Many researchers, thus, discussed the importance of taking into account the regime changes in modelling and improving forecasts of volatility in financial time series (Ephraim & Merhav, 2002; Franke, 2012; Tong, 2015; Tyssedal & Tjostheim, 1988).

Engle and Patton (2001) underscored the ability to capture pronounced persistence, mean-reversion and asymmetry as the desirable properties a good volatility model needs to possess. However, they did not consider regime changes in the data which will likely affect the performance of the GARCH model. Haas, Mittnik and Paolella (2004a) recommended that volatility estimation and prediction should be based on models that incorporate regime switching in the data. Turner, Startz and Nelson (1989) demonstrated the superiority of regime switching over traditional GARCH-type models in analyzing stock markets data. Indeed for a long time, research in financial econometrics has focused on improving the predictive ability of GARCH models. Klaassen (2002) is of the view that the predictions of GARCH models can be improved by the adoption of regime switching models which allow the parameters of the GARCH to vary over time in the data. This approach, according to Ardia et al. (2017) allows for volatility predictions that can be quickly responsive to the levels of unconditional volatility. Calvert and Fisher (2004) showed that GARCH models are a smooth transition processes and are thus unable to capture sudden switches that characterise financial time series. Indeed these switches arising out of the uncertainties of the economy define the trading activities of equities in frontier markets. Majority of equities in frontier markets trade asynchronously usually in response to some sporadic developments in the economy.

Diebold (1986) also noted the lack of fit of GARCH models to interest rate data and attributed it to changing monetary policies which influence the statistics generated by the data. By adopting a regime switching model rather than straight GARCH, we build a parsimonious specification model with fewer lags to characterise the data generation process of the underlying mechanism. Finally, using S&P 500 returns with weekly, daily, 10-minute and 1-minute frequencies, BenSaida (2015) showed that regime switching models are far more efficient in detecting different regimes in the data.

Methodology

The notation used in the model is due to Haas et al. (2004b) and expanded on by Bauwens et al. (2010). Consider a stationary time series $\{y_t\}^T_{t=1}$ demeaned and partition into k non-overlapping regimes i.e. $R_1 \cup R_2 \cup \ldots \cup R_k = R$ and $R_i \cap R_j = \emptyset$ where $i \neq j$ and $R_i s$ are the regimes. The regime indicator $k \in \{1,2,3,\ldots,K\}$ is an unobserved Markov process. The data generating process under MS-GARCH is specified as:

$$y_t = \mu_t + \sigma_t u_t,\ u_t \sim iid\,(0,1) \qquad (1)$$

$$\sigma_t^2 = \omega_{S_t} + \alpha_{S_t}\,\varepsilon_{t-1}^{\ 2} + \beta_{S_t}\,\sigma_{t-1}^{\ 2} \qquad (2)$$

where the assumptions $\omega_{S_t} > 0, \alpha_{S_t} \geq 0,\ \beta_{S_t} \geq 0$ are imposed in **(1)** to ensure a positive variance and $\varepsilon_t = y_t - \mu_{S_t}$. The particular regime $s_t = \{1,2,\ldots,K\}$ is a stochastic process and data dependent. The persistence of each regime follows a first-order Markov process given by the transition probability matrix for a two regime model of the form:

$$P = \begin{bmatrix} P(S_t = 1 \mid S_{t-1} = 1) & P(S_t = 2 \mid S_{t-1} = 1) \\ P(S_t = 1 \mid S_{t-1} = 2) & P(S_t = 2 \mid S_{t-1} = 2) \end{bmatrix} = \begin{bmatrix} P_{11} & P_{12} \\ P_{21} & P_{22} \end{bmatrix} \quad (3)$$

The same logic can be extended for more than two regimes. Each regime S_t generates returns y_i with a probability measure $\{\pi_i\}$. Under the first-order Markov process, state information depends on the most recent data point, all past information is given a weight of zero.

Following the work of Hamilton and Raj (2002), the probability of a change from regime i and j follow a logistic model given as:

$$P(S_{t+1} = j \mid S_t = i, z_i) = \frac{\exp(\beta y_{t-1})}{1 + \exp(\beta y_{t-1})} \quad (4)$$

for some $z_t \in Z_t$ and $0 < P_{ij} < 1$ for all i,j which belongs to the state space $\{1,...,K\}$. An additional Markov property requires that $\Sigma^{K}_{j=1} P_{ij} = 1$ for any $I \in \{1,...,K\}$. This allows the regime switching model to adjust its persistence to the state of the economy. Other approaches to modeling the transition probability have been suggested by Diebold, Lee and Weinbach (1994), Filardo (1994) and Durland and McCurdy (1994).

Estimation

We estimate the parameters $\theta = (\mu_t, u_t, \sigma_t, \omega_{S_t}, \alpha_{S_t}, \beta_{S_t})$ simultaneously in a two-stage process using maximum likelihood estimation (MLE) recommended by Augustyniak (2014) and the adaptive random-walk Metropolis sampler of Vihola (2012) using the parameters from the MLE as starting values for the sampler. The estimation of MLE for the Markov switching model is prone to convergence to local maxima because of they are path dependent; hence the use of the Bayesian approach incorporating the Markov Chain Monte Carlo (MCMC) sampling procedure (Mullen, Ardia, Gil, Windover, & Cline, 2011). For a return series consisting of a vector of $y = \{y_1, . . ., y_T\}'$. the likelihood function is:

$$L(\theta \mid y) = \Pi^{T}_{t=1} f(y_t \mid \theta, I_{t-1}), \quad (5)$$

where $f(y_t|\theta, I_{t-1})$ refers to the probability density function of y_t given the past information set I_{t-1} and the model parameters given by θ. To incorporate the regimes $\{1, ..., K\}$, the conditional density of y_t is modified as:

$$f(y_t|\theta, I_{t-1}) = \Sigma^{K}_{i=1} \Sigma^{K}_{j=1} P_{ij}\, z_{i,t-1} f_{\varphi} (y_t \mid s_t = j, \theta, I_{t-1}), \quad (6)$$

where $z_{i,t-1} = P(s_{t-1} = i \mid \theta, I_{t-1})$ is the filtered probability of state i at time t-1. We thus maximise the logarithm of the maximum likelihood of **(6)** to obtain the estimator Θ. These parameter estimates are used as the priors for the adaptive random-walk Metropolis-Hastings sampler (Hastings, 1970; Metropolis, Rosenbluth, Rosenbluth, Teller, & Teller, 1953) to get the final values of the estimator Θ. Inference is then based on this vector of parameters Θ.

Data and Results

The data for the analysis came from the daily GSE All-Share Index spanning the period from January 04, 2011 to March 31, 2017 giving 1549 data points. Ghana, as of August, 2017, is in the FTSE Frontier Market Index Series. We calculated the log-returns from

$$r_t = In\left(\frac{P_t}{P_{t-1}}\right)$$

where P_t is the price at time t to obtain a total of 1548 data points.

Descriptive Statistics

A plot of the index shows how the level has evolved over the sample period. The index peaked around January 2014 and remained at that level with marked fluctuations until about July 2015. The market calmed thereafter with the level fluctuating around a downward trend until January 2017 when it bottomed up.

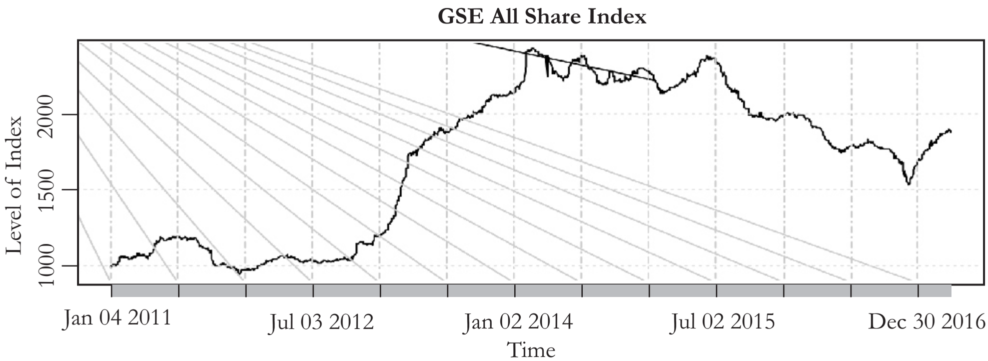

Figure 1: Plot of the GSE All Share Index

The histogram of log-returns with the normal curve superimposed on it is shown in Fig. 2. The graph shows deviations from normality. The skew is slightly positive at 0.38 with a kurtosis of 5.5 confirming the presence of fat tails in the data. This is an important difference in the market returns of the frontier markets on one hand and the developed markets on the other hand where Albuquerque (2012) found that overall aggregate market returns are left tailed whereas individual firms' returns are positively skewed. In the emerging markets, such positive skewness is well documented in Bekaert et al. (1998). Brennan (1993) reasoned that agency problems may induce such asymmetries in the data generating process for the returns.

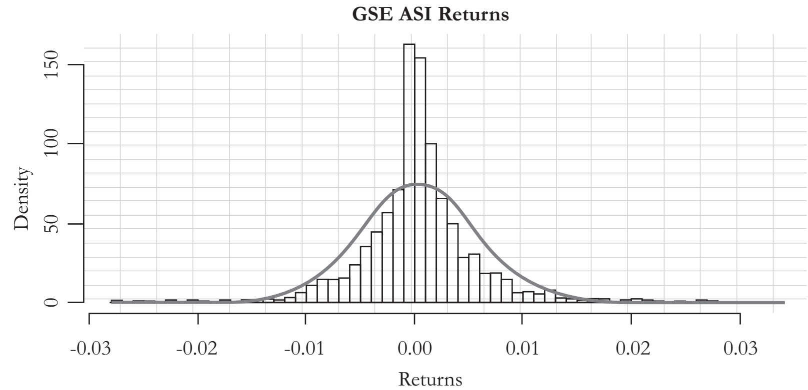

Figure 2: Histogram of the GSE All Share Index Returns

An Anderson-Darling test yielded a *p-value* < 2.2e-16 confirming the alternate hypothesis that there are observable differences between the data and the normal distribution.

We conducted the nonlinear test of Tsay (1986) to assess the nonlinearity in our data series. The test produced a test statistic of 2.107 with a *p-value* of 0.00015 for eight lags. We thus reject the null hypothesis at the 1% significant level that the series follow an autoregressive process and conclude that we have a nonlinear data series. A plot of the log-returns, the squared log-returns and absolute log-returns of the GSE All Share Index is shown in Figure 3. There are regions of extreme volatility in the returns followed by periods of relative tranquillity.

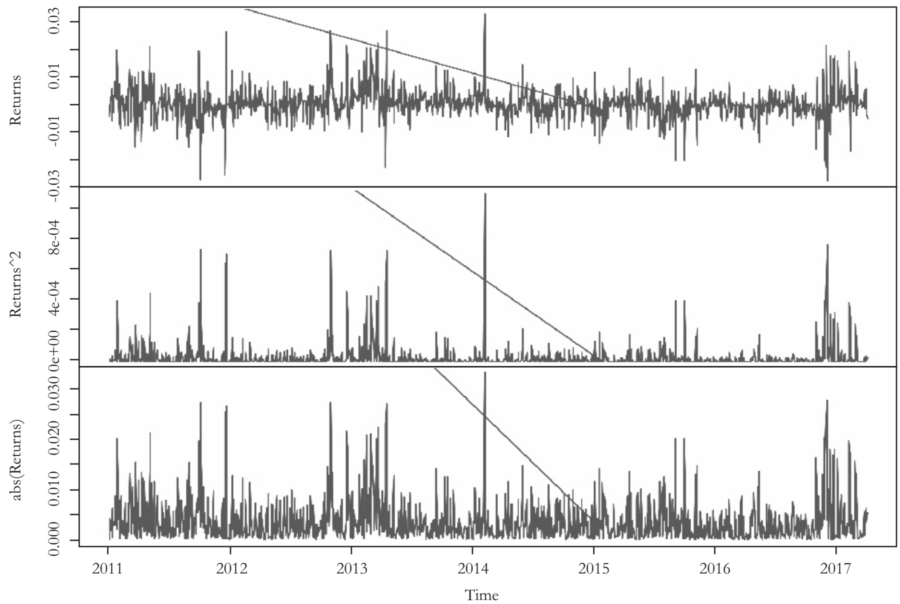

Figure 3: Graphs of the returns, the squared returns and the absolute returns of the GSE index

An augmented Dickey-Fuller test of the returns gave a p-value of 0.01 confirming the stationary of the returns.

Thin and asynchronous trading remain a problem in frontier markets as report by Appiah-Kusi & Menyah (2003) and Mlambo & Biekpe (2005) in their study of the Ghanaian and Nigerian equity markets. Scholes & Williams (1977), Dimson (1979), Fowler & Rorke (1983) and Lo and MacKinlay (1990) reported returns are likely to be biased as a result of thin trading. In regime switching work, for example, asynchronous trading through the effect of stale prices is likely to induce spurious regimes in the data. We therefore used the method recommended by Miller, Muthuswamy & Whaley (1994) and Claessens, Dasgupta & Glen (1995) to adjust the log-returns. The analysis subsequent to this is based on the adjusted returns.

A plot of the autocorrelation of the returns, the squared returns and absolute returns is shown in Figure 4. This shows significant autocorrelations going as far is the twenty-fifth lag, suggesting the presence of ARCH effects in the data.

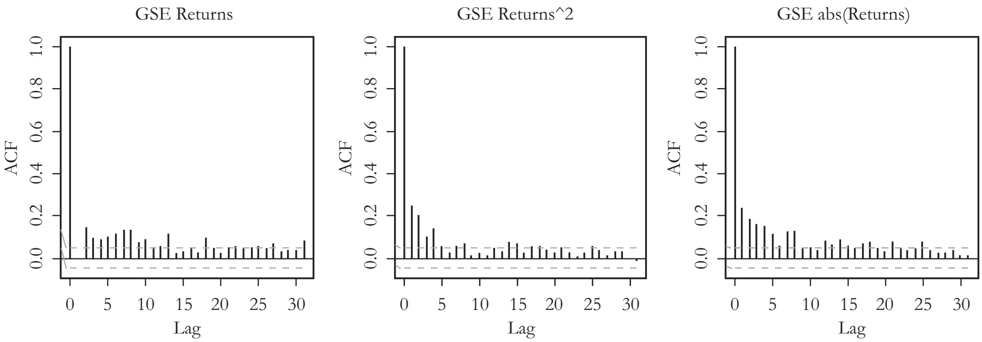

Figure 4: Autocorrelation plot of the returns, squared returns and absolute returns

The Lagrange Multiplier (LM) test of Engle (1982) for the presence of conditional heteroscedasticity or ARCH effects was conducted. The LM test with twelve lags gave a chi-square of 146.48 and a $p < 2.2 * 10^{-16}$ confirming the presence of strong ARCH effect in the data.

Regime Switching Analysis

A GJR-GARCH of Glosten, Jagannathan and Runkle (1993) with *student-t* distribution is assumed in each regime in the Markov switching model. These assumptions are based on the pronounced reaction of equity markets to negative shocks (Kang, Ratti, & Yoon, 2015; Ding, Granger, & Engle, 1993) and the fat-tails of the distribution (Jondeau & Rockinger, 2003). A two-state Markov regime switching model is specified as in Haas et al. (2004a) thus:

$$y_t|(\mathrm{s}_{t-1} = k, I_{t-1}) \sim S(0, h_{t,1}, v)$$

$$h_{k,t} = \alpha_{0,k} + (\alpha_{1,k} + \alpha_{2,k}\,\mathrm{II}_{\{y_{t-1<0}\}})y_{t-1}^{\ 2} + \beta_k h_{k,t-1},$$

with $k \in \{1,2\}$ and II an indicator function which takes the value one if the condition is true and zero otherwise. Hardy (2001) studied regime switching extensively in equity markets and found that two regimes adequately describe the market volatility dynamics. The model is built using the R package MSGARCH of Ardia et al. (2017) built on the R statistical language platform (R Core Team, 2016). The results are displayed in Tables 1 and 2.

Table 1: Results of the MS-GARCH model with two regimes

	Mean	SD	SE	TSSE	RNE
$\alpha_{0,1}$	0.0009	0.0009	0.0001	0.0001	0.1503
$\alpha_{1,1}$	0.0312	0.0095	0.0003	0.0005	0.3082
$\alpha_{2,1}$	0.0005	0.0007	0.0002	0.0007	0.1936
β_1	0.7531	0.0557	0.0016	0.0035	0.2003
υ_1	94.0962	2.0592	0.0582	0.1457	0.1598
$\alpha_{0,2}$	0.1369	0.0386	0.0011	0.0021	0.259
$\alpha_{1,2}$	0.3417	0.0836	0.0024	0.0041	0.3335
$\alpha_{2,2}$	0.0842	0.0388	0.0011	0.0027	0.1599
β_2	0.5471	0.098	0.0028	0.005	0.3115
υ_2	15.457	3.7623	0.1064	0.2248	0.2242
P_{11}	0.4421	0.0489	0.0014	0.0022	0.3837
P_{21}	0.4188	0.0413	0.0012	0.0022	0.295

Table 2: Transition matrix

	t+1|k=1	t+1|k=2
t+1|k=1	0.4421	0.5579
t+1|k=2	0.4188	0.5812

Table 3 shows the results of the 95% posterior intervals for the estimated parameters of the model. The intervals computed for $\alpha/2$ equal-tails shows all the parameters to be significant.

Table 3: 95% Bayesian credible intervals of the parameters

Parameters	2.50%	97.50%
$\alpha_{0,1}$	0.00004	0.00321
$\alpha_{1,1}$	0.01631	0.05267
$\alpha_{2,1}$	0.00012	0.00222
β_1	0.62491	0.83881
υ_1	89.70408	97.59313
$\alpha_{0,2}$	0.07266	0.22588
$\alpha_{1,2}$	0.20253	0.53275
$\alpha_{2,2}$	0.03153	0.18311
β_2	0.34078	0.72150
υ_2	9.67035	24.65909

The results of the parameter estimates point to the heterogeneity in the evolution of the volatility across both regimes. Regime 1's degrees of freedom is 94 compared with 15 for Regime 2. This shows that the second regime is heavy-tailed. The estimated annualised unconditional levels of volatility are 6.40% and 15.73% confirming the presence of a relatively low and high regime respectively. The conditional probability of finding itself in Regime 1 and Regime 2 is respectively 42% and 53%. Figure 5 shows that the high volatility regime bursts briefly from time to time. The low regime dominated trading days for much of 2014 to the end of 2016. The regimes have different reactions to past negative returns. Regime 1 has a past negative reaction of 0.0145 and regime 2's reaction is 0.0394 showing a heightened response to past negative shocks. This is in line with regime two's high unconditional volatility. Result from the transition matrix is shown in Table 2. Figure 5 shows annualised volatility. It is seen from the figure that volatility is high near the end of the year to the beginning of the following year. The market has been generally quiet from the second quarter of 2014 to the end of 2016.

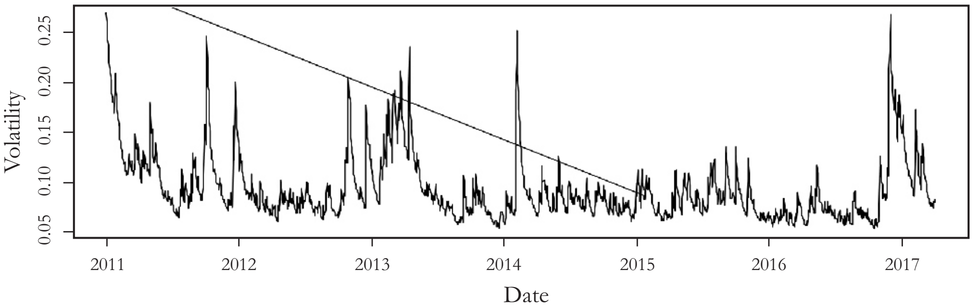

Figure 5: Evolution of volatility GSE All Share Index through time

The persistence of the volatility is given by $\alpha_{1,k} + \frac{1}{2}\alpha_{2,k} + \beta_k$ where $k \in \{1,2\}$ is 0.7848 for regime 1 and 0.973 for regime 2. This shows the higher persistence of volatility for regime 2. Overall, for the period studied, the results show regime 1 in which the unconditional volatility of low with equally slow negative reaction to past news and relatively low persistence of volatility. In contrast, regime 2 is characterised by high volatility persistence, a high unconditional volatility period and relatively to regime 1, a swift negative response to past news. For investors, regime 2 offers both opportunity and risk in the trading process. They have to layer their trading and investments with strategies that mitigate the turbulence associated with trading in such periods.

To compare the annualised unconditional volatility of the returns of GSE index with the returns of some developed and emerging world equity markets, we downloaded data for the S&P 500 (US), CAC (France), DAX (Germany), Nikkei (Japan) and Hang Seng (Hong Kong) from Yahoo! Finance for the same period January 04, 2011 to March 31, 2017 and subjected them to the same two-regime GJR-GARCH with student-t innovations. Table 4 displays the unconditional volatility for the two regimes of the markets.

Table 4: Comparison of some developed and emerging market unconditional volatility with GSE

	CAC	S&P 500	DAX	Nikkei	Hang Seng	GSE
Regime 1	15.14%	11.40%	7.16%	20.79%	16.14%	6.40%
Regime 2	33.65%	17.25%	25.01%	31.01%	54.27%	15.73%

The annualised unconditional volatility of the returns of the GSE All Share index is low in both regimes examined for the period. Compared with the Hang Seng, an emerging market index of the Hong Kong equity market, the GSE index being a frontier market index has exhibited a rather benign volatility in both regimes. Overall, the volatility of frontier markets of SSA as represented by the GSE index is lower than some of the developed world markets.

Model Comparison

We compared our MSGARCH models with a GJR-GARCH with a *student-t* distribution assuming a single-regime. The choice of the GARCH-type and distribution of the innovations was made similar to those assumptions used in building the regime-switching model. The results of the GARCH and related parameters are shown in Table 5:

Table 5: GJR-GARCH student-t distribution parameters

	Mean	SD	SE	TSSE	RNE
α_0	0.0906	0.031	0.0009	0.0014	0.3965
α_1	0.2866	0.0648	0.0018	0.0028	0.43
α_2	0.0555	0.0485	0.0014	0.002	0.4777
β_1	0.6324	0.0654	0.0018	0.0028	0.4442
N	2.6862	0.1669	0.0047	0.0073	0.4166

The Deviance Information Criteria (DIC) of Spiegelhalter et al. (2002) of the model with regime switching and the single regime models are 2298 and 2351 respectively. This shows the former model is superior.

Model Backtesting

We backtested the MSGARCH models to assess its adequacy and quality in prediction. In backtesting the aim is to estimate whether the magnitude of losses predicted by the Value-at-Risk (VaR) is accurate to a certain significance level. We implemented the conditional coverage test of Christoffersen (1998) which tests for both the number of exceedances and clustering of these exceedances. The competing test of Kupiec (1995), that is the unconditional coverage, does not take the clustering of VaR violations into consideration. In risk modeling we are interested in these clustering events as they are more likely to lead to extreme market volatility for days in a row and increasing the risk of bankruptcy. Empirically, clustering of volatility has a direct linkage with increase in market volatility; hence the conditional coverage is the appropriate test as it tracks the changes in data, especially where such changes are large, over time.

The likelihood ratio test of the conditional coverage (LR_{cc}) is distributed as $\chi^2(2)$ with the hypothesis stated as follows:

H_0: correct conditional coverage
H_a: incorrect conditional coverage.

The test was conducted with a specified 5% significance level. We obtained a p-value of less than 0.4130844, hence we fail to reject the null hypothesis. Thus, we conclude that the MSGARCH model is correct on average.

Conclusion

Volatility in frontier markets is has been said to be higher than that in the developed markets (Kiviaho, Nikkinen, Piljak, & Rothovius, 2014). We have shown that for sub-Saharan African frontier equity markets, that is not necessarily the case. Also, we have shown the superiority of the regime-switching GARCH model over the classical GARCH in describing the evolution of the heteroscedastic dynamic over the sample period.

By incorporating regime switching into estimating volatility, we have provided investors an important tool to support investment decision-making about the markets studied. Macro investors have to identify the drivers of risk within the high volatility regimes and build trading strategies to counter and even profit from the dynamics in the market. A lack of full understanding of frontier market risk dynamics has been cited in the practitioner literature as one of the reasons why investors stay away or demand above risk returns for investing in such markets. Being able to predict to some degree of accuracy how the markets will behave in the face of such events represent a competitive advantage on its own. Regime switching models are able to capture the states of the underlying economy and how they influence the level of volatility in the equity markets. Thus investors are able to use this knowledge of the probabilities and the duration of each regime to better tailor their trading strategies in line with their risk preferences. For policymakers, both fiscal and monetary, their actions ripple through the markets and affect investor disposition to deploying their funds on the Ghana Stock Exchange. Policy actions show up in markets returns and volatility of returns in equity markets. Thus, equity markets serve as the barometer of policy effectiveness in a country. Policies should thus keep an eye on volatility of returns in the equity markets to ensure the smooth functioning of equity markets in the countries labelled as "frontier markets".

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Development Infancy: Explaining Unsecured Environments to Large-scale Industries in Nigeria from the Frustrated-aggression Theory Perspectives

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https://dx.doi.org/10.4314/ajmr.v27i1.7

Abstract
This paper examines security challenges on large-scale industries toward achieving industrial development in Nigeria. This study does this within the framework of the frustration-aggression theory. Triangulation of sampling techniques (purposive, simple random, key informant) and methods (Focus Group Discussions, In-depth Interviews) of data collection were adopted. The paper identified extreme level of insecurity as an impediment to large-scale industrial growth. Unsecured environment arose from over-concentration of industries, weak governmental institutions and total neglect of indigenes on basic social amenities by the government and industrialists. The findings revealed over-exploitation of host-community resources and poor employment policies which triggered anger of many frustrated unemployed youths. Unsecured environment hindered economic expansion, created unpleasant political interferences that led to poor interpersonal relationship between the indigenes and industrialists, and ill-social effects. These effects led to the shortage of manpower, untimely and unnatural deaths of industrialists' and companies' owners. Also, there were short business plans by the industrialists, various courts' embargo on communal and family lands, diversification of compensation by government institutions and low patronage of investors on large-scale industries. There is a need for communal policing, effective communities welfare policies to cement the relationship between the companies and their host communities.

Keywords: Development infancy, Unsecured environments, Large-scale industries, Frustration and aggression, Perspectives, Nigeria

Introduction

Insecurity remains a strong problem confronting the entire humanity across the world and some developing nations have been soaked with the rising incidence of homicide, armed robbery, kidnapping and a host of other crimes (Otite, 2000; Nwagboso, 2012). Africa has been in the forefront of global statistics on insecurity, and Nigeria has been labelled to be leading among the countries with the highest rate of violent and non-violent crimes in recent times (Unachukwu, 2014). In Nigeria Watch's (2014) report, the incidence of murder increased by 24.2% between 2011 and 2013 while homicide (28%), armed robbery (32%) and kidnapping (14%) from 2010 to 2013. The state of insecurity in the country has brought many negative effects to every sector, and many persons have been internally displaced while many citizens met their untimely deaths. To Ross *et al.* (2000), the level of insecurity has brought about the political, social and economic development to a standstill and various economic policies have been disrupted. This has hindered the growth and development of large-scale industries, which directly suppressed its large-scale industries' development and economic growth to a state of perpetual infancy. Edmond (2017) showed that Nigeria underwent a downward economic trend from seventh place to 127th in 2016 and security management also fell to the 129th position.

Large-scale industries are important for the economy development anywhere in the world, including the western and developed economies. This is so because such industries engage in rigorous partnership in national building through customised products instead of generic products and recruitment of highly effective and skilled manpower (Ranchman and Meson, 2016). It also serves as the last production center to the small and medium enterprises on which the economy of a country much relies. Holmberg (2008) links some advantages of large-scale industries to development and expansion of a large market and products standardisation, employment of large numbers of workers and massive acquisition of heavy machinery. From the post-independent era in 1960s to the Third Aborted Republic in November 1993, many indigenous companies sprang up to improve on the Nigeria's economic system. Many large-scale entrepreneurs had the intent to improve on economic development by increasing on gross national development, improve trade balance, stimulate other sectors, and improve on infrastructural developments and standard of living. However, due to the wide geographical expanse and poor developmental policies in Nigeria by various successive governments, insecurity became a fundamental hindrance to large-scale industries' development. Hence, entrepreneurs and workers encountered various challenges such as insecurity in their different locations in Nigeria (Adeniyi, 2016). Middlemen and operators of small and medium businesses were not spared (Egwu, 2001) and many senior managers of businesses and investors were targeted by kidnappers (Innocent and Onyishi, 2011). For instance, Shettima (2016) reveals that over 45% of all the communal conflicts occurred in locations of large-scale industries in Nigeria and many constant communal clashes have reduced towns and villages, including the industries to rubble. Ngwube (2013) concludes that various insecurity occurrences either targeted or led to the loss of human lives and destruc-tion of properties.

In the same light, Onifade *et al.* (2013) lamented the frequent occurrence of bomb explosions and persistent communal conflicts, orchestrated by religious extremists in the northern part of the country. In Nigeria, approximately 2,000 to 3,000 deaths were recorded in 2016 (Edmong, 2017), which scholars like Abubakar (2004) and Adeniyi (2016) have remarked that the clashes are becoming a real danger to any meaningful economic development. The Nigeria Police Force Official Gazette's (2018) report indicates that about 2,800 lives were lost to communal conflict between 2007 and 2009 while over 615 people were killed in 25 different communal attacks in the first nine months of 2013. An estimated 2,000 lives has been lost to various bomb explosions in 2010 with a total of 53 successful explosions (Nigeria Watch, 2014).

Countries like Liberia, Sierra Leone, Guinea and more recently Cote d'Ivoire in the sub-region have been plagued with a problem of insecurity in the past two decades (Otite, 2000; Bombade, 2007; Tonah, 2007). There have as well been different reports of high insecurity which had led to the closure of many large-scale industries in the Adakwlu, Ayingle, Konkonba and Nanumba (Ghana) and Blue Nile and Nuba Mountains in the southern provinces of Sudan (Aapengnue, 2010; Bombade, 2007; Tonah, 2007). Edmong (2017) observes that with the crime wave, the desire of local investors and foreign investors to establish large scale industries has decreases because of anxiety and fear. Insecurity has become a serious concern that affects every facet of economic development. This has led all the related sectors to remain in perpetual infancy.

The foundation of the paper lies on the negative effects of insecurity on what could have caused the smooth expansion of large-scale industries in Nigeria. However, the primary focus of this study is to examine the causes of insecurity through the lens of the frustration-aggression theory and its effect on large-scale industry development in Nigeria. This study adds to a number of researches which have adopted various theories to examine the critical stages of insecurity (Kling *et al.*, 2007). The study is distinct because it uses the frustration-aggression framework to examine the causes of insecurity and the effects on the growth of the large-scale industries. It departs from existing studies which tend to highlight the causes of insecurity without linking it to the operation of large-scale industries. Achumba *et al.* (2013) have identified several causes of insecurity in Nigeria especially those that have negative effects on economic and national developments. The study fills the gap in knowledge because various approaches and policies by the government have failed to actualise a crime-free society though the existing causes of insecurity have earlier been established. This study, therefore, holistically examines the causes of insecurity and some implications for the economic growth and development of large-scale industries in Nigeria.

Literature Review and Theoretical framework

The rapid growth of large-scale industries has had a great relevance in national economic policies especially in their special role of mass job creation and high production capacity which lays a strong economic foundation. Despite its importance to the economy, the data collected from Boter and Lundstrom (2005) showed that 70% of the total population of Nigeria depends on agriculture for their livelihood, which indicated that many people depend on subsistence farming. As a result of over-reliance on foreign goods that has subjected the undeveloped countries' economies to western economies, different economic reform programs were adopted to improve on large-scale production of goods and services in Nigeria. There was a rapid switch of emphasis from the small-medium scale to grandiose capital intensive large-scale industrial projects based on the philosophy of input substitution. The conceptual scope of large-scale industries in this paper includes secondary and tertiary productions. Secondary industries mainly engage in the turning of raw materials into consumable and finished goods while tertiary industries were concerned with the rendering of direct or indirect services. Bothamley (2004) asserts that the contribution of large-scale business to the growth of the economy cannot be over-emphasised; large-scale businesses emerged as an important agent of economic transformations.

A serious concern arose from a 2004 survey conducted by the Manufacturers Association of Nigeria (MAN), showing that only about ten percent (10%) of the large-scale industries in Nigeria are fully effective. Ngwube (2013) has attributed the failure of the large-scale industries to the amount of available capital and unavailability of raw materials while Nwobobia (2012) opines that efficient managerial skills determines the volume of production and efficiency of other factors of production. Nwobobia further identified technical know-how, market limitation and lack of cooperative spirit among entrepreneurs. Other scholars such as Onifade *et al.* (2013) attributed large scale industries' failure to inadequate government support in term of financial and infrastructural facilities, and particularly lack of uninterrupted power, unfavourable government policies, and political instability. Oraka (2013) argues that the high level of illiteracy and inadequate skilled labour affects the effectiveness of the large-scale industries operations. Based on the various economic solutions identified by prominent scholars (Gill and Biger, 2012) to improve the strength of the large-scale industries, little positive results have been achieved.

Innocent and Onyishi (2011) refer to the concept of security as stability and continuity of livelihood, predictability of daily life, protection from crime and freedom, and from psychological harm. The alarming level of insecurity and the different crime attacks in different parts of Nigeria left unpalatable consequences for the nation's economy especially in large-scale industries, and its growth. Oche (2001) emphasises that the absence of peace and adequate security led to low economic developments. However, secured environments are a *desideratum, sine qua non* for rapid large-scale industries' growth and development of any country. Scholars like Nwanegbo and Odigbo (2013) applauds the Federal Government of Nigeria for her policies and mechanisms, some of which were the huge allocation devoted to security and the national assembly's passing the Anti-Terrorism Bill in 2011.

The paper is anchored on the theory of frustration-aggression, which stipulates that aggression is the result of frustration which results from an individual's inability to attain their goals. According to Butendach and Dewitte (2005), persistent insecurity in a society is a product of aggressive behaviour which results from issues such as poverty and unemployment as emphasised in the structural and functional deficiencies. This theory encompasses some weak elements of structural functionalism and institutional theories as strong link premises to the level of insecurity in Nigeria. The effectiveness of micro-economics deals with smaller units or components of the economy (family, individual, firm and government), which indirectly determines the larger units or aggregate of the economy. Various parts of the society and economic activities are seen to be closely related and taken together as a complete system. Upon these premises, every segment of the society must be adequately cared for through various institutions of government in order to provide a peaceful environment to create a crime-free environment for industries to thrive. All various institutions of government need to work together to support the effective execution of government policies to provide adequate security for the lives and properties of the people.

Citizens agree to the social contract by submitting their individual powers to the government, and the government reciprocates by providing security for the people. Therefore, any lapses in the system or any other institutions of government directly or indirectly cause antisocial behaviours by the people. People get provoked and frustrated with the inability of the various institutions to check-mate economic saboteurs within the society. For example, companies require applicants who want to enter into a position to have three to five years of experience. Katsina (2012) identifies lack of equal access to land and natural resources and lack of equal employment opportunities to some segments of people in a community or society. This is what Adeniyi (2016) classifies as a state of long-term deprivation of people's well-being, a situation that is considered a cause of criminal behaviour from the frustrated youths. Katsina (2012) argues that unequal means or access to good living conditions by majority of the members of a country and lack of equal access to these indices (natural resources, financial aids, equal treatment to governmental policies, undue tax) create unnecessary aggression. Nwagboso (2012), in the same vein, argues that the failure of successive administrations in Nigeria to address these social menaces of poverty, unemployment and inequitable distribution of wealth among clans or communities is a major cause of insecurity. The paper concludes that many youths including the community leaders were angry as a result of unequal opportunities to social, economy benefits between the indigenes and non-indigenes in their communities.

Methodology

The research design adopted for the study is cross-sectional and exploratory because it explores the subject matter of insecurity at a particular period of time. The paper utilises both the primary and secondary sources of data collection. In primary sources, only qualitative method which comprises of Focus Group Discussions and In-Depth Interview of data collection was employed. The secondary sources included records from relevant governmental institutions, journals and newspapers. Data from the archives of Nigeria Watch and Trent Online were sought and utilised. The researchers adopted triangulation of sampling techniques such as purposive, simple random sampling and key informants. Triangulation was adopted to cover all the variables such as the welfare packages adopted by different company operators in different selected communities and all forms of frustrations that led to existing interpersonal relationship. Use of multiple techniques also provides a richer picture of the link between high insecurity and the destruction of large-scale industries in selected communities through different approaches.

Through purposive sampling, one state (Northwest: *Kano*, Northeast: *Borno*, Northcentral: *Kogi*, Southeast: *Anambra*, Southwest: *Ogun*, South-south: *Rivers*) was selected in each geo-political zone. The researchers agreed to select the states on the reports of Nigeria Police Force Official Gazette (2018) that labelled the selected states as the most industrialised states with the high persistent level of insecurity in the country. With the records on various industrial areas through the Manufacturers Association of Nigeria at each state level and State Ministries of Commerce and Industries, the researchers adopted simple random techniques to select specific industrial areas from the list. Therefore, the study was limited to these selected areas: Kano state: *Sharada-Kano*; Borno state: *Bama-Maiduguri*; Kogi state: *Ewekoro*; Anambra state: *Nnewi*; Ogun state: *Shagamu*; Rivers state: *Rumuobiakani-PortHarcourt*. As a result of different peculiarities in Nigeria's six geo-political zones, the researchers organized Focus Group Discussions in both Northern and Southern parts. The discussions in each part comprised of Chairmen of Manufacturers Association of Nigeria, MAN (2), Chairmen of Small and Medium Enterprises, SMEs (2), two managing directors (2) purposively selected in various large-scale industries, two police and security agents (2) and two lower cadre staff (2) selected in the study areas. A total of 10 discussants participated, and issues relating to security variables were the focused. Such variables includes the causes of insecurity, hostile relationship between the indigenes and the industrialists or the investors or government, and examination of different welfare packages adopted by the industrialists and the government and the state of large-scale industries' in their host communities were discussed.

The study further utilised the In-Depth Interviews to complement the Focus Group Discussions to ascertain more respondents' perception on the subject matter. The researchers' interviewed the respondents using both closed and open-ended questions to know their perception on numerous issues relating to the interpersonal relationship existing between the host communities and the government, the industrialists or the company owners. Other keen issues are the level of basic social amenities in the host communities provided by the companies, the effect of their activities on both environmental and physical environments, causes of persistent attacks and unnecessary demands of royalty and compensation by the indigenes. With caution to the respondents' issues bothering on the environmental relations and the main causes of rampant attacks on the company owners were discussed. Community leader (1), traditional leader (1), youth leader (1) and communal militant leader (1) were selected as key informants for interview in each of the 6 selected areas, totalling 24 respondents. The in-depth interviews probe into the causes of high insecurity and crime in the areas. Due to the wide geographical area and distance between the study areas, the research covered a period of about 2 months between April 13 and June 10, 2019, during the hours of 8 a.m. to 5 p.m. The researchers embarked on the standardised greetings and familiarisation with the residents of the areas, particularly with the traditional, youth and militant leaders to prevent undue attack from the frustrated host communities. Though, despite the fact that the ethics of research were followed, yet, some respondents were not friendly and extremely reluctant to talk about their suffering due to the past frustrations they have experienced in their areas.

Qualitative data (Focus Group Discussions) were transcribed and analysed using manual content analysis involving narrative analysis (with summary of facts discovered by majority respondents). In-depth interview data were analysed on ethnographic summary and verbatim quotations. Concerning confidentiality, this research ensured a great deal of confidentiality in order to protect participants who gave relevant information against their communities' interests and against the principle of 'accessory to the fact' which is criminally liable.

Results and Discussions

A). Socio-demographic characteristics

Table 1 below showed socio-demographic characteristics of the interviewees and the result indicated a mean age of respondents of 35+ 15.2 years (that is, their age were between 19years 10 months and 50 years two months); 10 interviewees were Muslims, Christians (8) and 6 interviewees practised African Traditional Religions. The marital status of the respondents indicated that 16 interviewees were married, 4 were single and 4 were widowers. The marital status of the discussants shows that majority respondents are married. The result showed that 14 interviewees had no formal education, 4 interviewees had primary education, 4 interviewees had secondary education and only 2 interviewees had post-secondary education. These results imply that majority respondents were not well educated in these industrialised areas. Only 6 of the respondents claimed not to have been involved in one offence or the other ranging from communal disturbances to criminal offences. Only few of the respondents (4) had a fixed source of income, and 6 of the respondents claimed to have travelled out of their community to seek for job but to no avail. All the respondents claimed to have relied on the communities' royalty from these industries in their areas to cater for their needs.

Table 1: Socio-demographic Characteristics of the Interviewees

Options		Community leaders (n=6)	Traditional leaders (n=6)	Youth leaders (n=6)	Communal militant leaders (n=6)
Age	21-40	4	2	5	5
	41-60	1	3	1	1
	61+	1	1	-	-
	TOTAL	**6**	**6**	**6**	**6**
Religious affiliation	Muslim	3	3	3	2
	Christian	2	3	1	2
	African Traditional Religion	1	-	2	4
	TOTAL	**6**	**6**	**6**	**6**
Marital status	Single	-	-	1	3
	Married	5	6	4	1
	Divorce/separate	1	-	1	2
	TOTAL	**6**	**6**	**6**	**6**
Educational qualification	No formal	2	4	3	5
	Primary School	2	1	1	-
	Secondary school	1	1	1	1
	Post-secondary	1	-	1	-
	TOTAL	**6**	**6**	**6**	**6**
Participation in Criminal disturbance	Not at all	2	3	1	-
	one time	2	2	4	4
	twice or more	2	1	1	2
	TOTAL	**6**	**6**	**6**	**6**
Income	Pretty income	1	2	4	1
	Fixed income	3	2	1	-
	Relied on royalty	2	2	1	5
	TOTAL	**6**	**6**	**6**	**6**
Travelling experience	Never	4	4	4	6
	Once	1	1	1	-
	Twice or more	1	1	1	-
	TOTAL	**6**	**6**	**6**	**6**

B) High Incidence of Insecurity

Table 2 shows the classification of crimes by Nigeria Watch and Trent Online database which revealed crimes in all the six geo-political zones in Nigeria; these crimes were grouped in 6 criminal offences from June 2006 to September 2019. These crimes were armed robbery, kidnapping, assassination and hooliganism, cultism, communal violence, and Boko-Haram terrorism. An overall 25,966 cases were recorded between June, 2006 and September, 2019. Mass explosion of bombs and merciless action of the Boko-

Table 2: Reported Crimes in Nigeria (June 2006-September 2019)

Geo-political zones	Armed robbery	Kidnapping	Assassination /hooliganism	Cultism	Communal violence	Boko-Haram terrorism	Total
South-south	1408	1171	1140	1481	136	-	5336
South-west	1344	187	1304	1473	163	-	4471
South-east	1543	1125	164	1197	125	12	4166
North-central	1465	124	184	1190	1718	35	4716
North-east	1150	127	156	120	671	1256	3480
North-west	1508	148	1105	149	813	74	3797
TOTAL	**8418**	**2882**	**4053**	**5610**	**3626**	**1377**	**25966**

Sources: Nigeria Watch and Trent Online Records

Haram terrorists led to an increase number of attacks in the North-East, Nigeria (Nigeria Police Force Official Gazette, 2018). Armed robbery contributed 8,418 (32.4%) of the overall crime incidents, kidnapping contributed 2,882 (11.1%), assassination and hooliganism, 4,053 (15.6%), cultism contributed 5,610 (21.6%), communal violence 3,626 (14.0%) and Boko-Haram terrorism also contributed 1,377 (5.3%). Though, armed robbery had the highest crime incidence, the North-east was reported as the most affected geo-political zone with the highest number of fatalities due to frequent explosives and attacks by Boko-Haram. In support of these results, a discussant and a chairman of MAN said that,

> I was a victim of two robbery attacks within a year in this area. The last one was in my company's premise where three men lost their lives. They spoke our dialect just to know they were quite familiar with our company.

The Nigeria Police Force Official Gazette's (2018) reports that over 28% of the armed robberies in the southern parts of Nigeria, targeted the large-scale entrepreneurs or investors. The result tallies with the opinion of Okpara and Wynn (2007) that the level of crime and insecurity situations were increasing, and hindered the economic growth as a result of constant attack of large industries.

C) Causes of insecurity in industrialised areas

I) Overconcentration of industries

All the interviewees lamented that the high rate of migrants to their communities triggered the level of unemployment and poverty, since limited jobs were pursued by a large number of the immigrants. Majority interviewees agreed that prevalent financial hardship in the area and the persistent stress of residents as a result of the high standard of living and strict economic competitiveness contributed to the persistent insecurity level. Most discussants agreed that their communities turned to industrial and commercial centres almost overnight and the means to provide for their daily needs become difficult, the different ethnic cultures and different cultural views on issues led to persistent conflicts. Most respondents identified different factors that caused anti-social behaviour such as lack of proper care, love and affection within the community. In support of this result, Cole (2012) argues that rapid industrialisation and unsystematic urbanisation breeds slum areas with prime causes of insecurity.

ii) Institutional deficiency

Most discussants identified many heinous crimes targeted at owners of large scale industries and lamented on the various national laws and statues, which are inefficient to bring the perpetrators of these dastardly acts to book. Some interviewees claimed that some of these criminals targeted indigenes and complained that legal processes are usually delayed. Also, offenders are often pardoned under the prerogative of mercy. An interviewee complained that criminals or offenders were released without due process and this increases the tempo of insecurity in their environments. An interviewee, a community leader buttressed these results:

> With so much hooliganism and thuggery in my area, there is poor attitudinal and behavioural disposition of security personnel toward these devastating acts. In many cases, security personnel assigned to deal with given security situations lack the expertise and equipment to handle the situations in a way to prevent them from occurring. Lack of institutional capacity resulting in government failure described as the corrosion or breakdown of institutional infrastructures. The state of insecurity and constant attack of business moguls in Nigeria is greatly a function of government failure, or can be linked to government failure.

iii) Neglect of the indigenous people

Participants linked high insecurity in their communities to the deteriorating state of social amenities. Bad roads, irregular water supply and other social infrastructure triggers poverty and increase the level of intolerance among the angry residents. Discussants stated that rampant robbery is a result of the incapacity of government and the companies to establish a welfare package, and lack of provision of the basic needs for the people. A respondent further stated that lack of basic necessities by the state has created a pool of frustrated people who are ignited easily by any violent event. Most discussants agreed that there is a high correlation between the degree of poverty, unemployment, economic wellbeing (standard of living) of the citizens and the degree of insecurity. Participants complained that residents are unemployed and angered to see non-residents employed in these industries. An interviewee, a traditional leader said that,

> Unemployment among the youths makes the community unproductive, and the higher the unemployment, the higher the crime and poverty rate. Frequent state of insecurity testifies to the fact that our communities have been long neglected by the government and these industries.

One of the interviewees, a community militant leader expressed his sadness that,

> I was drawn into crime because of frustration stemming from inabi-

> lity to meet up with my daily needs. I operated in many parts of these communities and our gang attacked businessmen and owners of these big companies because they were the rich ones in our community.

A large number of the Nigerian population is frustrated and have lost hope, especially the youth, and have now emerged to express their disillusion about the pervasive state of inequality (Okechukwu, 2011). This tallied with participants' position that unequal access to basic social amenities triggered youth's involvement in crime, which makes the environment unsafe for business. Also, one of the interviewees agreed that majority of their youths were too lazy, they rely on annual royalties paid by these companies, and this community leader said that over-reliance of these royalties led to persistent conflicts. Some interviewees claimed that after the distribution of these annual royalties to each compound in their community, some community leaders and unemployed youths went underneath to extort money from these companies through criminal threats.

iv) Low profile works

Most interviewees indicated that some industries adopt wrong policies and methods in employing their workers, which does not favour the indigenous communities. Many respondents lamented the government's policies to give grants and short loans to SMEs who were mainly the non-indigenes. Majority of the respondents lamented that financial aids were allocated in their communities to non-indigenes. One of the interviewees, a community militant leader said that,

> Many of the policies of government favoured the non-indigenes more than the indigenous people. Loans and financial aids were given to settlers in small enterprises more than the indigenes. I joined a communal militant gang after various efforts to seek for loan from the government failed.

Most interviewees lamented that the companies in their various communities failed at health and education. Some claimed that most of their youths were not having adequate access to better education and they were mostly recruited into lower cadres such as gardeners, gatemen and office assistants in these companies.

v) Exploitation of community resources

Abdu (2002) identifies communal conflict as a major hindrance to large scale industries development in Nigeria. The discussants agreed that various cases of communal and tribal conflicts were pending in courts and many embargo and interlocutory injunction judgments were passed in restriction of companies to utilise the land effectively. Land is a major factor of production for these industries, therefore their operations are seriously hampered. This result buttresses the view of Ngwube (2013) that economic growth and development depend largely on mutual harmony and co-existence, and peaceful relationship of individuals with one another. Most of the interviewees lamented that the ownership of their forefathers' lands were in the hands of these foreign companies operators, which majority of the residents termed as a sad development. Many community leaders objected to the extraction of local raw materials and capital movement from their areas to the urban areas.

D) Effects of unsecured environment to large-scale industry and development

i) Economic effects

A major effect of insecurity according to respondents, was the low supply of raw materials to the industries. One of the criteria for the location of these industries had a proximity to raw materials; access to these raw materials became difficult as a result of persistent insecurity. Discussants agreed that companies suffered from an inadequate supply of raw materials that were necessary for maximum production. The level of insecurity also affected the level of patronage of customers and the discussants said that both the small and medium scale entrepreneurs created alternatives by finding other manufacturers for the supply of raw materials. This result implies that in the most unsecured environments, the companies witnessed poor patronage in term of supply of raw materials and selling of their product to the consumers since markets in these communities could not be expanded. Many discussants agreed that insecurity discourages local and foreign investment as it makes investment unattractive to business people and business operations during the period of violence; this led to the outright close down of many industries in their areas. One of the discussants, a Chairman of SME gave a personal experience that,

> He held a meeting with a foreign investor to provide both financial and technical assistance to his firm. After successful deliberation on the terms, the investor was lodged in a hotel in the community, without noticing that kidnappers were monitoring their moments. He was kidnapped in the mid-night and taken to an unknown destination. Three staff of the hotel lost their lives and the investor was freed after a month with millions of naira paid as ransom. This sad experience ended our agreement on the proposed assistance.

Sourcing for capital from many financial institutions to run most firms effectively has become difficult in Nigeria. The discussants agreed that most available finance houses ignored their loan requests in these unsecured areas. Little was available for most companies in these conflict areas because of low turnover and inability to pay the loans back at an appropriate period. Most discussants agreed that some capital assets of the firm were destroyed including physical cash, motor vehicles, buildings, plants and machinery. The loss of equipment during the vandalisation hindered the firms from expansion and development. Discussants complained that large scale companies were not expanding because the cost of production increases as a result of direct loss of goods and properties from an increasing level of insecurity. Discussants lamented the extent of poor and deadly environments, enveloped with the high level of uncertainty about the prospects of investment and lives of the people since little or no intervention came from the security agents. Oraka (2013) observes that the rate of large scale industries' survival is less than 5% in the second year of their existence since financial conditions required to maintain security is enormous. A discussant, a director said that,

> The cost of maintaining security by business organisations is too high for effective operations. Companies have to take a lot of security precaution which are expensive. They are operating and maintaining security personnel as well as security infrastructure in order to ensure the security of their properties and the lives of their staff and customers.

Salawu (2010) claims that the killing of human beings in the course of crisis reduced experienced personnel and high shortage of human power. In order to corroborate this result, a chairman of SMEs said that,

> The unabated activities of the kidnappers have reached such an alarming rate. Their operations have led to the loss of many lives and properties in the society, which reduces human resources available for economic growth.

The implication of these results was that there is manpower shortage for the business which ultimately affects the success and survival of the business. The finding agrees with the opinion of Adeniyi (2016) that the level of insecurity and crime has increased death rate and able-bodied youth have lost their lives and the number of orphans and widows has grown considerably.

Majority of the discussants agreed that the general atmosphere of production is characterised with mistrust. Fear, anxiety and frenzies persisting in their communities. They further established that the criminal acts have led to the dehumanisation of traders (women, children, and men) especially in areas where rape, child abuse and neglect are used as instruments of war. Majority of the participants shared in Thurik and Wennekers' (2004) view that large-scale businesses in Nigeria find it difficult to survive because the untimely death of the owners or entrepreneurs often leads to the end of the business. This implies that constant attacks prevent entrepreneurs from having a long term plan management and employment strategy because of the level of insecurity and fear of sudden attacks in these business environments. Many discussants said that they left unsecured environments to more conducive ones because business thrives in a conflict-free area.

ii) Unpleasant political interference

Most participants agreed that the managements of various industries were forced to be involved in the political and social activities of each community area. They sponsored activities within these areas to maintain peaceful co-existence and improve on social and interpersonal relationships. Some discussants claimed that the financial demands from community leaders became too exorbitant to bear. The inability to maintain the financial relationship became a huge problem to their operation. A discussant, Chairman of Manufacturer Association of Nigeria (MAN) buttressed these results and said that,

> They used to contact my company for financial assistance annually for social and political activities. Until recently, it become a monthly routine, they pleaded for assistance to fuel communal conflicts expenses and political candidates against

> each other which is contrarily to the objective of the company. If you ignored their financial demands, the next day they pursuit your staff to get access to the company entrance.

Besides financial request from communities, most discussants agreed that different youths organised annual carnivals seeking for financial assistance from the companies' managements. Some of the interviewees claimed that easy access to the management and fulfilment to their financial needs led to persistent demands. This role of extreme hospitality played by these companies led to high level of hooliganism and increased political thuggery in these areas.

Most participants agreed that the different groups and communities' frequent financial requests hampered the peaceful co-existence among the communal residents and the staff. Many discussants claimed that an undue and unhealthy relationship existed among the communities' members and companies were targeted on the basis of being biased during political and civil demonstrations which created high unsecured company environments then find it difficult to expand. In some cases, governmental institutions demand for bribes from the company managements before allowing them to perform their lawful duties in these areas. One of the discussants, a Chairman of MAN said thus:

> Due to the high level of crimes in this community, most government institutions often demanded one favour or the others from us before they perform their legal responsibilities. We bribed to get access to power, we bought the transformers, we bought vehicles for the police to prevent the crimes, we bought fuel and maintained both the officers and the vehicles. Most of the institutions officials were corrupt and the company were used for these extra expenses which hindered their growth and development.

iii) Negative social effects

Participants identified a greater level of distrust among various segments of the people in these industrial areas and this affected the working relationship between the staff and the management. Most discussants agreed that the sense of insecurity between the communities and their industrial workers created fear in each relationship. Residents were not tolerant enough; on simple slight provocations, they destroyed industrial properties at will. One of the discussants, a director of one of the large-scale industries said that,

> Though in some cases the investors bear little risks but the fear of risk associated with the business in these areas is too high to bear. Lots of risks were involved like vandalisation and stealing which hard to bear which hindered any possible expansion.

In every organisation, there are hierarchies in the management flow, and information was passed from one unit to another, from one department or unit to another, in order of seniority. Many discussants agreed that as a result of violence and persistent level of insecurity in these industrial areas, there was a high level of insubordination. The rules and regulation were not adequately followed. One of the discussants, a police officer said that,

> In the para-military organisation, the highest offence is insubordination, to disregard of the given order by the senior officers to the junior officers is mutiny, which is liable to dismissal and imprisonment. This was not applicable to the officers in these areas, in most cases, the juniors disobeyed lawful orders.

Otite (2000) links anti-social behaviour in every society to socio-economic influences, children learned criminal acts in home, family, neighbourhood, peers within their social environment. Little numbers of residents in these areas were fond of criminal acts and many participants claimed that it negatively affected the smooth running of the industries. This result was buttressed by Boakye (2010) that children encountered violence in their immediate social environment and grow to become a criminal because they have either witnessed or they have been victims of violent acts. Nwobobia (2012) attributes environmental factors as indices for the workers anti-social behaviour especially when the industries were situated in an area prone to insecurity and hostility like slums. Most participants agreed that there were low effective personality people or staff within these industrialised areas since many competent hands ran away from these areas because of the high level of insecurity.

Conclusion and Recommendations

With a wide range of opportunities associated with the expansion of large-scale industries in Nigeria, high crime and insecurity has hindered its growth and development. Insecurity constitute threats to lives and properties, it discourages local and foreign investors from expanding their businesses because of the alarming rate recorded. The paper identified high levels of criminal such as armed robbery, kidnapping, cultism, communal and ethnic conflicts, hired assassination and terrorism. Unsecured environments arose from overconcentration of different industries in an industrial community which triggered undue competition between different people and cultures. Total neglect of the host communities by both the government and the industrialists in basic social amenities, such as basic qualitative education, better health service at the expense of their community exploitation, capital movement causes aggression between the residents and the companies' managements. Wrong policies of both the government and the entrepreneurs toward equal access to loans, employments often led to conflicts. However, the persistent insecurity in the area hindered economic expansion, created unpleasant political interferences that led to poor interpersonal relationships between the host communities and the industrialists and ill-social effects. The paper concludes that security challenges constitute a threat to economic development since large scale entrepreneurs faced problem of shortage of manpower, untimely and unnatural deaths of companies' owners and short business' plans and span. It also led to various courts' embargo on com-munal and family lands which restricted expansion, diversification of fund for compensation and low patronage of small scale industries, buyers and investors.

The federal government should formulate and effectively implement policies and programmes which are capable of addressing the root causes of insecurity in Nigeria such as poverty, unemployment, environmental degradation, dearth of infrastructural facilities and uneven development. In order to contribute meaningfully to the industrial production and gross domestic product, there is a need to provide formidable institutions that will foster adequate security for a rapid growth in these areas. Government should sanitise financial institutions to allow an equal access to financial aids in order to prevent undue aggression from the frustrated residents.

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Road Pricing: A solution to Ghana's Traffic Congestion

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https://dx.doi.org/10.4314/ajmr.v27i1.8

Abstract
Congestion in major cities around the world calls for the proper management of space vehicles occupy on road networks. The paper develops models that combine the density of car usage in an area, space occupies by vehicles and the damage they cause to roads in the payment of vehicle registration, renewal, and towing rates. The paper confirms that larger vehicles cause greater congestion on roads by virtue of the space they occupy and causes greater damage to the road, as compared to small-sized vehicles. Vehicles should pay road rates commensurate with the density of vehicles, the space they occupy and the damage they cause to the road. From our models, Mercedes-Benz and Toyota, Camry are undercharged across all the offices in the country, except for Tema and Bolga, which charges 120 and 80 Ghana cedis respectively above the 60 Ghana cedis national charge. For new car registration fees, we found that the current charge is higher for New Audi A1 Sportback 2019 except at the Tema registration office, which charges more than 20 Ghana cedi above the national charge of 100 Ghana cedis. The paper also provides models for costing the removal of vehicles that park at unauthorized places as well as broken-down vehicles on highways. The paper suggests that this method of road user rates payment, aside being a good source of revenue for governments would encourage people to patronize public transport. This will ease road congestion, road rage as well as other unwanted road behaviors, particularly around and within city centres.

Key words and phrases: Car density, congestion, damage, space, vehicle registration fees, vehicle renewal fees

Introduction

It is common to drive to city centres in Ghana and have trouble in getting a place to park. The situation becomes critical, particularly during Christmas, Easter, and public holidays. Vehicles fill parking spaces during such occasions, spilling onto the roads thus narrowing the road space for vehicular movements and manoeuvring. Congestion on road networks in cities in Ghana can be attributed to several sources. Firstly, major roads get blocked by drivers of "tro-tro" buses (a form of mini-buses for conveying passengers), in their quest to load and off-load passengers. This forces other vehicles to either stop or slows down. Secondly, pavements meant for pedestrians are used as trading places by hawkers and traders. Consequently, pedestrians are forced to share the road with vehicles, slowing down vehicular movement in the process. Thirdly, broken -down vehicles are sometimes left unattended on busy roads obstructing the free flow of traffic. Fourthly, although other roads may be accessible to the city, the bad nature of some of the roads, compels most drivers to use the main roads to the city centre. Limited road transport infrastructure, excessive number of vehicles and road works, pose as added reasons to the congestion on Ghanaian roads. In addition, vehicle ownership represents growing affluence and social status in Ghana. The number of cars in the country has been growing because of improvement in standard of living. People have become accustomed to the ease of mobility through private ownership of vehicles, while public transportation is often perceived as unreliable, inefficient, or inconvenient. Thus, economic activities in the cities are slowing down because of the large number of vehicles on roads. As such, there is the urgent need to find innovative ways to manage Ghana's road congestion.

Vehicle manufacturers produce vehicles of various designs, shapes, and sizes to meet the needs of their customers. Large vehicles are safer to drive than smaller ones. As a result of their heavy weight, they are solid on the road, which allows them to have firmer grip on the road and thus steadier. On the other hand, small cars occupy smaller space on the road and less likely to cause greater damage to the road compared to big cars. They are generally economical to use because fuel consumption is lower compared to the large-sized vehicles. Large vehicles occupy greater space on the road and contributes greatly to congestion compared to small-sized ones. For salon and other small vehicles, Driver and Vehicle Licensing Authority (DVLA), in Ghana charges vehicle registration and renewal fees mainly based on the cubic capacity (CC), but not their size, weight nor the place where the vehicle spends more time. This model for registration charges would have been appropriate in the past when there was a correlation between vehicle cubic capacity and size: the larger the CC, the larger the vehicle. However, in recent times it has become imperative for the size of the vehicles to be considered in the determination of the fees because modern technology allows car manufacturers to design bigger cars with relatively smaller CC. These bigger cars, despite occupying more space and causing more damage to the road, pay lesser road rates because of their registration and vehicle renewal fees being solely based on their CC. Moreover, DVLA vehicle registration and renewal charges does not incorporate the number of vehicles in the region or the city where the vehicle is registered and operates. To compel people to drive less in congested cities and towns, these must be factored in the vehicle registration and the renewal of fees. In Ghana, the application of charges to vehicles that park at unauthorized places have been ad-hoc. The same goes for broken down vehicles that are left unattended on roads. The paper provides pricing models for these cases as well.

This paper contributes to the existing literature by developing model that uses damage and the space occupied by vehicles to determine the amount to pay for vehicle registration and renewal fees. To the best of our knowledge, the paper is first of a kind to come up with such a model and it will form the bases for further research in traffic congestions in Ghana. Specifically, the paper argues that large vehicles cause greater congestion by virtue of the space they occupy and consequently should pay fees commensurate with the size they occupy on the road and the damage they cause to the roads. We also develop pricing models for vehicles that are left unattended or packed at unauthorized places. These models incorporate the density of the vehicle, the area in which a vehicle operates or spends more time, vehicles left unattended or parked. This mode of vehicle registration and renewal fees can influence a vehicle owner's decision to drive or patronize public transport. The latter option would reduce the number of vehicles on the road. The models will be used to assess whether vehicle registration and vehicle renewal fees are appropriately assigned by DVLA vis-à-vis the space and the damage these vehicles cause to the road. The models will be a huge relief to the DVLA as it struggles to find appropriate models for fairer fee charges. The models will also be useful to organizations that clamp vehicles that park at unauthorized places. It will guide policy on what charges to impose on vehicles parked at unauthorized places as well as broken-down vehicles left on roads unattended. Environmental pollution and its associated costs will hopefully decline as lesser number of vehicles use the road. This will also deter big cars from entering the city and encourage motorists to patronize public means of transport.

The rest of the study is organized as follows. Section 2 contains the literature where a discussion of the car market in Ghana is provided. The development of the model is contained in section 3 whereas the section 4 discusses the results based on the model developed. Section 5 give the summary, concludes, and provides some recommendations for policymakers. Study limitation is also provided in section 6.

Literature Review

This section provides an overview of the car market in Ghana, discusses space pricing incorporating the reasons for space pricing and the general deterrence theory which underpin the study. Ghana is generally a technology taker: majority of the vehicles used on the roads are imported. Almost every vehicle type can be found in Ghana but small vehicles of up to 2000CC abounds on roads. From data obtained from DVLA, nearly 30% of all vehicles in Ghana falls in this category as at 2018. As can be seen from Figure 1, from 2008, the number of motorbikes has surpassed the usage of small vehicles of capacity up to 2000CC.

There is currently one indigenous Car Manufacturing Company, Kantanka Automobile (see kantankaautomobile.com). Established by Apostle Dr. Ing. Kwadwo Safo in 1994, it was incorporated as a limited liability Company in 2004 to research into car manufacturing. Since going into commercial production in 2017, it is believed to have produced just over 1000 vehicles with the largest purchase by Government of Ghana in 2019 to encourage local patronage. The current vehicles manufactured by Kantanka Automobile and their price list is indicated in the table below.

Table 1: Vehicle type and Prices

Kantanka Vehicle Model	Price (GH¢)
Onantefo	150,000
Omama Luxury	130,000
Omama Ordinary (4×4),	95,000
K71	65,000 and 70,000
Amoanimaah	70,000
Mensah	130,000

The vehicles are designed to meet the challenging needs of the African road networks. However, Kantanka Automobile vehicles have, however, been criticized by the public as over-elaborated and expensive (1$ ≈ GH¢5.66), for the average worker in Ghana. Thus, questioning the market target of the vehicles manufactured by Katanka Automobile.

The dynamics of global transportation landscape has made it difficult to restrict the use of vehicles. Consequently, government through regulatory agencies resorts to fiscal regimes to control the purchase, circulation, and movement of vehicles as strategy to reduce the negative impact on the environment (Mabit, 2014). Over time, studies have established that raising taxes as a control measure in the car sector have always received opposition prompting scholars to explore alternative measures (Arnberg, Bjørner, Fosgerau and Larsen 2008). Space pricing has been identified as an effective fiscal measure for controlling the high spate of congestion and its associated environmental impact of emission and congestion. According to Bull (2003), space pricing is an integrated framework of charging vehicles for occupying an authorized or unauthorized space based on weight and space occupied. Similarly, space pricing is seen as an allocation of space to road users and charging them a fee for the space occupied. The practice of space pricing involves allocating traffic space to vehicles based on their size, time of the day and space occupied by the vehicle at a fee. Studies have established that vehicular buyers and users are more sensitive to price (Greene, Evans and Hiestand 2013; Killian and Sims, 2006).

The effect of fiscal policies has been widely recognized in emerging literature even though no consensus exists especially in European countries employing fiscal measures in the Automobile sector (Bergantino, Intini, and Percoco, 2019). According to Bergantino et al. (2019), Superbollo fiscal regime in the automobile sector had a positive effect on the reduction of carbon emission and kW (engine power of vehicles expressed in Kilowatt). The study further noted that the effect of a fiscal regime is only realized when people buy cars with smaller engines. According to Hennessy and Tol (2011), space pricing is to serve as a measure to control for carbon dioxide emission, shifting the sale and purchase of petrol cars to diesel cars in Ireland. Cavallaro, Giaretta and Nocera (2018), established that it aimed at raising funds to regulate demand for traffic space, manage roads, and to reduce excessive and unauthorized parking and circulation of vehicles. Hibbs's (2004), argument corroborate the work of Cavallaro et al. (2018), that charging vehicle owners for parking space at a particular time of the day is an efficient strategy to road use which reflect in a low level of road congestion, particularly in the cities.

Space pricing continues to grow because population and economic activities in the cities continue be on the surge (Downs, 2004). Obviously, due to limited road parking capacity, space pricing solutions has become necessary to improve road capacity use, mostly in the city where congestion is high (Bull, 2003). Unauthorized parking causes traffic congestion and environmental hazards that are more difficult to quantify in terms of waste and environmental pollution. Recent studies have alluded to the fact that there is a health consequence on people living in vehicular congested areas (Invernizzi, Ruprecht, Mazza, De Marco, Močnik, Sioutas and Westerdahl, 2011). Hence, charging vehicles for authorized use of road will improve the efficiency of road use and reduce congestion (Bull, 2003). Apparently, lack of policy attention from city road regulators and its ramifications have led to scholars calling for an integration of land use and the transport system as a strategy to improve the negative effect of city congestion (Zhao, 2010; Cervero, 2013; Zegras, 2012).

According to Cavallaro et al. (2018), the rationale for space pricing is straightforward in a form of reducing congestion, lost time, pollution and cost of road accidents. It is to reduce congestion, save lost time, pollution and minimise the cost of road accidents. Even though space pricing schemes may not be the only scheme to control unauthorized vehicle parking and traffic congestion, an integrated model that incorporates optimal space pricing scheme as tax policy is important to achieve the objective of space pricing (Button, 1993). The literature identifies many impacts of space pricing model such as weight of the vehicle, peak and non-peak hours and the behaviour of the vehicle user (Sinha and Labi, 2007). The theory further suggests that space pricing might be more efficient (Arnott, De Palma and Lindsey, 1993), but the efficiency of space pricing will depend on the responses of the vehicle users (Gibson and Carnovale, 2015). Indeed, the behavioural dimensions of space pricing, and the behaviour of road users are key to ensure successful achievement of space pricing policy.

Integrating space management strategies into tax structure and policy in developing countries has become a new paradigm for controlling vehicle congestion. Over the years, the idea of taxation has remained an important source of revenue for the Ghana government. Government agencies and institutions are always devising taxation models to widen tax “bracket” and also enhance tax compliance and collection. Superbollo tax was introduced in Italy in 2011 for car exceeding 185 kW (Berganitino et al., 2019). According to Berganitino et al. (2019), Superbollo fiscal regime in the car sector had a positive effect on the number of cars circulating and also reducing larger capacity cars. Similarly, Gervasoni and Sartori (2007), noted that different road pricing systems such as road tolls, value pricing, high occupancy tolls, travel distance-based charging, travel time-based charging, road space rationing, cordon-based charging, zonal schemes, satellite-based road pricing schemes exist.

The transport industry is one of the avenues for the implementation of fiscal regimes including a collection of driver and vehicular license and toll charges among others. Several avenues exist in the transportation industry for the government to control movement, parking and dis-use of environmental unfriendly vehicles. Even though these charges may seem confusing, they all serve different purposes. Mabit (2014), established that in Denmark, for instance, vehicular tax reform has a significant impact on vehicle purchase behaviour. Berganitino et al. (2019), noted that the Superbollo tax resulted in a behavioural change towards greener cars, thus reducing the emission of carbon dioxide.

From a behavioural perspective, awareness and persuasion of vehicle users about the existence of vehicle incentives are important in controlling the use and movement of vehicles in the environment (Cerruti, Daminato and Fillipini, 2019). They showed that vehicle owners who are aware of the incentives will be encouraged to exhibit good behaviour to take up the monetary benefits.
Governments and city authorities have used space pricing as a strategic tool to control antisocial behaviour and generate public revenues (Croci, 2016). These strategies have yielded some significant result in controlling traffic and vehicular congestion on roads, especially in the cities. Despite the strategic nature of space pricing, the problem of unauthorized parking and congestion remain which precipitate the fact that unauthorized parking and congestion requires more than persuasion. Cole (1998), noted that there are some instances which create recurrent high demand at certain times, thus creating road congestion. In view of this, extant literature opined that a high number of vehicles in a country must relate with increase fiscal regimes (Button, 1993). The effectiveness of the relationship between space pricing strategy and taxation has, however, received attention in terms of anti-social welfare (Raux, 2005), and pollution abatement in cities (Eliasson, Hultkrantz, Nerhagen and Rosqvist, 2009). In a survey by Vrtic, Schuessler, Erath and Axhausen (2010), behavioural responses of the vehicle users are also essential in the integration of space pricing and taxation policy.

A study by Dargay, Gately and Sommer (2007), examined the relationship between annual growth in GDP per capita and vehicle growth per 1000 inhabitant in 45 nations, representing 75 per cent of the world's populations. The study found that vehicle fleets of the world in 2002 was around 800 million and was predicted to increase to 2 billion in 2030. They showed that not only has ownership of cars increased but also the usage of vehicles, particularly in the cities. Importantly, findings from this study suggest that increase in vehicle use on roads has the potential to contribute to traffic congestion, hence a pricing scheme for parking space will significantly improve congestion situation and also generate revenue for the government. In a pluralist perspective, vehicle users must be held responsible at different levels to pay a price that fully captures the problem caused (Croci, 2016). According to Bull (2003), the charge for unauthorized parking and parking space must take into consideration a high number of vehicles used especially in peak hours where demand for the road usage is high.

Downs (2004), and Bull (2003), opined that the desire to live in low-density settlements and government policies contributed to the increase in car ownership and usage. Similarly, as policy prescription, governments as a policy prescription must integrate the ownership and usage of vehicles into the tax policy where people are taxed based on the space and weight occupied by the vehicle. In such a practice, public-private collaboration can be enhanced which will ensure that specialized places are designed for vehicles to park for a fee. Consequently, this integration will reduce time lost due to congestion, local pollution, noise, pavement costs and road damages, increase in accidents risks (Croci, 2016).

Extant literature confirmed several determinant of space pricing policy such as space occupied, time, size of vehicle and number of travels, as a strategy to generate revenue and control traffic behaviour (Tiwari, Cervero, and Schipper, 2011; Ewing and Cervero, 2010; Givoni, Brand and Watkiss, 2009). Integration of space pricing base of space, weight and time of the day means that people will drive only when the benefits from driving outweigh the sum of the costs, which include prices to be paid (Newbery, 1988; 1990). Phang and Toh (2004), further noted that space pricing policy captures tolls per entry where vehicle are charge based on size, route taken, and time of the day. In Milan for instance, a congestion charge is implemented concurrently with the space occupied, time and park-and-ride facilities (Rotaris, Danielis, Marcucci and Massiani, 2010). These strategies generate revenue for the government while controlling road congestion and unauthorized parking on roads. Peculiar to Ghana, integration of space pricing into the tax policies means that government must enhance the operations of public Bus Rapid Transport, Metro Transport and State Transport which will convey commuters.

This research, therefore, proposes an integration of a model which incorporates space pricing approach into fiscal regimes such as space pricing policy. In such as integration, space price or toll should consider four key elements including the size of the vehicle, weight, space occupied and routes taken by the vehicle. An integrated approach will mean the ability to charge these vehicles for parking either in government or private designated parking space. Consequently, this initiative will reduce externalities such as authorized parking, road congestion, accidents, while generating money for the state.

The General Deterrence Theory (GDT) is adopted to underpin this study. According to Cuccia (1994), behavioural compliance is primarily viewed from General Deterrence Theory, which posits that individuals can be dissuaded from engaging in antisocial acts by using countermeasures including disincentive and sanctions (Schuessler, 2009). General Deterrence Theory is adopted for this study to understand how states can use countermeasures such as taxes to positively influence the wrong parking behaviour of vehicle users. Schuessler (2009), noted that using GDT as a guideline, countermeasures such as education, training and reprimands are important to mitigate, eliminate and/or prevent the occurrence and reoccurrence of behaviour. This study expands the tenants of this conceptual view of GDT to include non-human measures such as taxes as an approach to deter vehicle users from unauthorised parking and also generate revenue for the government. In order for the integration between space pricing and tax to yield result, vehicular users' needs to show positive behaviour towards traffic space.

Methodology and Model Development

Following the taxonomy of Phang and Toh (2004), space price or toll must inculcate four key dimensions which will deter people from unauthorized behaviour and at the same time generate revenue from those who will opt to park. This paper proposes that space price factors such as vehicle weight, size of the vehicle, vehicle concentration in an area and the length of time a vehicle is abandoned on the road should be used as indicators to determine prices thus ensuring fairness as well as creating revenue for government. Again, the behaviour of the road users (whether they heed to the proposed changes or otherwise), will determine the degree of deterrence, and the revenue that the government would generate. The models have been developed for these categories of vehicles: conforming vehicles, vehicle registration, break down vehicles, left on roads (classified as risky), and vehicles packed at unauthorized places.

To compute the taxes for well-behaved vehicle owners, let T_{ijt} be the tax paid by vehicle i in region j within a given period t and suppose that the surface area of vehicle i is S_i. Let D_{it} be the damage to road caused by vehicle i within a given period t. The greater the damage caused by a vehicle to the road, the greater the amount of funds needed to put the road in good shape. Therefore, we set T_{ijt} to be directly proportional to D_{it}. Moreover, the greater the surface area of the vehicle, the lesser the space available for other road users i.e. creating more inconvenience on the road therefore paying more tax (sin tax). Consequently, we set T_{ijt} to be directly proportional to S_i. We can thus write

$$T_{ijt} = K_j S_i D_{it} \tag{1}$$

where K_j is the constant for the town or city j, the town or city of registration of the vehicle i. We call K_j the car density (compare with Freund and Bertsimas (2004), pp. 283-284 where they computed sales per population that they called sales density). The town or city constant is estimated as

$$e^{\frac{N_j}{P_j}}$$

where N_j is the number of vehicles in the town or city j and P_j the population in town or city j.

Remark 1: K_j penalizes the vehicle owner in regions where greater number of people possesses their own vehicle. The constant e can be adjusted depending on the severity of the congestion. In the general case, K_j is estimated by

$$a^{\frac{N_j}{P_j}}$$

where $a \in \Re^+, a \neq 1$.
K_j increases as $a \to \infty$ and decreases as $a \to 0$. If $a = 1$, then congestion does not matter in payment of taxes which we rule out.

The heavier the vehicle, the greater the likelihood that a vehicle will cause damage to the road. In addition, the greater the mileage covered within a given period t, the greater the chance that a vehicle will cause damage to the road. Therefore, we estimate D_{it} by multiplying the weight of the vehicle W_i and the mileage covered within period t, M_t. That is

$$D_{it} = W_t M_t$$

Compare with Andoh and Quaye (2017), pps. 423 and 432.
Consequently,

$$T_{ijt} = K_j S_i W_i M_t \qquad (2)$$

Proposition 1: If $P_j >> N_j$ then

$$T_{ijt} \approx \left(1 + \frac{N_j}{P_j}\right) S_i D_{it}$$

To see this, observe that

$$K_j = 1 + \frac{N_j}{P_j} + \left(\frac{N_j}{P_j}\right)^2 + \left(\frac{N_j}{P_j}\right)^3 +$$

$$\ldots. \approx 1 + \frac{N_j}{P_j} \quad \text{for } P_j >> N_j.$$

This proposition says that in regions or cities where the number of vehicular usage is far less than the population, then the car density can be approximated by

$$1 + \frac{N_j}{P_j}$$

Proposition 2: If $P_j \approx N_j$, then $T_{ijt} \approx eS_i D_{it}$.

This proposition provides the tax that must be paid by a vehicle owner in regions or cities where almost every person has a vehicle.

Proposition 3: $T_{ijt} \in [S_i D_{it}, eS_i D_{it}]$ for $N_j \in [0, P_j]$.

This proposition says that the maximum a vehicle owner must pay as tax should not exceed $eS_i D_{it}$ and no one should pay an amount lower than $S_i D_{it}$ as a road user provided the number of vehicles do not exceed the population. The proposition provides guidelines to vehicle owners on the amount they have to pay as tax for usage of vehicles.

Proposition 4: If $N_j > P_j$, then

$$T_{ijt} \approx eS_i D_{it} e^{\frac{C_j}{P_j}} \qquad C_j \in Z^+$$

To see this, observe that if $N_j > P_j$, we can write $N_j > P_j + C_j$ for $C_j \in Z^+$. Then

$$K_j = e^{1 + \frac{C_j}{P_j}} = ee^{\frac{C_j}{P_j}}$$

The result then follows from equation (2).

C_j can be interpreted as the additional units of cars beyond the population. This proposition indicates that if the number of cars exceed the population in a particular region, vehicle owners must pay taxes which depends on exponentially growth of the additional unit of cars beyond the population. That is, the vehicle user pays more taxes if the vehicle is been used in a region where the number of cars exceeds the population.

Propositions 3 and 4 can be used to verify whether the taxes imposed on luxury vehicles introduced in August 2018 by the Ghana government are fair.

In order to compute vehicle registration fee (which is a requirement by law of all vehicles imported or manufactured in Ghana), let T_{ij} be the fees paid by vehicle i in region j and set

$$T_{ij} = \delta K_j S_i W_i = \delta e^{\frac{N_j}{P_j}} S_i W_i \qquad (3)$$

Equation (3), take into account the car density which penalizes the user for registering in regions where the volume of vehicles is high. δ is the mileage constant, a proxy for the age of the vehicle and penalizes the user for vehicles with greater mileage. The higher the mileage covered by the vehicle, the greater the likelihood that the vehicle will either break down and obstruct other road users. In addition, such vehicles pollute the environment the most and users of such vehicles must pay for the mess. Thus δ is to deter people for importing overused or over age vehicles into the country. The surface area of the vehicle S_i and the weight of the W_i of the vehicle also has a direct feed into the vehicle registration fee.

To compute the taxes required for vehicles that breakdown on roads, let L_t be the length of time a vehicle is abandoned on a highway and p the position where the vehicle is abandoned. Let $\check{T}_{ijt}$ be the tax/fee paid by vehicle i in region/city j for an abandoned vehicle for a period t.

We set $\check{T}_{ijt}$ to be partly fixed and varies directly as L_t, S_i, and D_{it} and so we can write

$$\check{T}_{ijt} = m_p + K_j S_i D_{it} L_t \qquad (4)$$

where m_p and K_j are constants. Call m_p, the position constant, the place where the vehicle is abandoned. The position where the vehicle is abandoned will be described as risky or risky-free. We estimate m_p by the going market rate for towing abandoned vehicle. If a vehicle is abandoned at a risky place, then the going market rate of towing that abandoned vehicle apply otherwise m_p is zero.

Remark 2: It should be noted that in computing K_j in (4), the region j where the vehicle is abandoned is used.

Risky positions are places where vehicles are abandoned in curves, at junctions, in hilly areas, zebra crossings, railway crossings and places where the vehicle seriously obstruct free flow of traffic.

Remark 3: For vehicles abandoned at risk-free positions, we place a maximum allowable time of two days beyond which equation (4), will apply to the vehicle owner.

Proposition 5: If $P_j >> N_j$ then

$$\check{T}_{ijt} = m_p + \left(1 + \frac{N_j}{P_j}\right) S_i D_{it} L_t$$

Proposition 6: If, $P_j \approx N_j$ then

$$\check{T}_{ijt} = m_p + e S_i D_{it} L_t$$

Proposition 7: For all abandoned vehicles, the amount charged lies in

$$\left[m_p + \left(1 + \frac{N_j}{P_j}\right) S_i D_{it}, m_p + e S_i D_{it} L_t \right]$$

provided $N_j \in [0, P_j]$

This proposition gives the vehicle owner a sense of how much must be paid for vehicles that are abandoned on highways.

Proposition 8: If $N_j > P_j$ then

$$\check{T}_{ijt} = m_p + eS_iD_{it}L_te^{\frac{C_j}{P_j}}$$

where C_j is as defined in proposition 4.

This proposition means that if a vehicle is abandoned in a region where the number of cars exceed the population, vehicle owners must pay taxes which depends on exponentially growth of the additional unit of cars beyond the population, the surface area, the damage it causes plus the cost of towing the vehicle.

To compute taxes for vehicles parked at unauthorized places, we let $\check{T}_{ijt}$ (to be partly fixed and varies directly as S_i and L_t and so we can write

$$\check{T}_{ijt} = m_p + K_jS_iL_t$$

if there the need to tow the vehicle and

$$\check{T}_{ijt} = K_jS_iL_t$$

if there is no need to tow the vehicle parked.

Model Test, Results and Discussions

This section tests the models developed on vehicles that typically ply on the Ghanaian roads.

Data for the analysis was obtained from Driver and Vehicle Licensing Authority (DVLA), and Ghana Statistical Service. From DVLA, we obtained data on the number of registered vehicles that operates on the Ghanaian road space from 1995 to 2018, the number of vehicle registration offices, vehicle roadworthy charges and vehicle registration charges. The population data for regions/cities where DVLA operates were obtained from the Ghana Statistical Service website.

Figure 1 below shows the plots of the number of selected vehicles registered from 1995 to 2018.

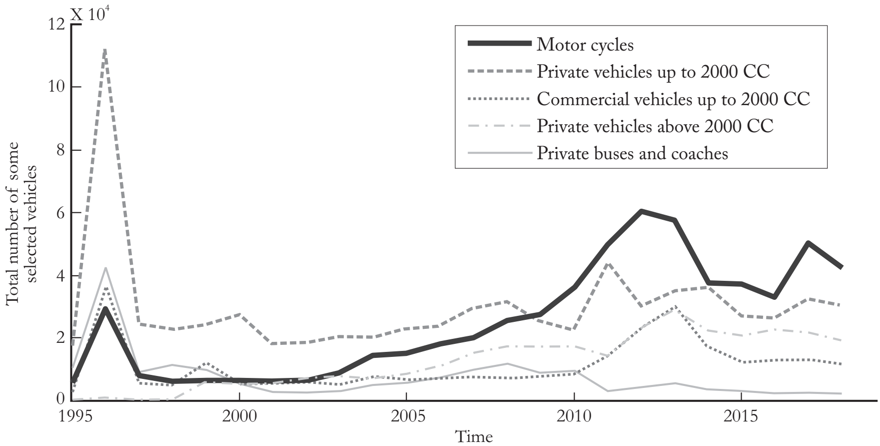

Figure 1: Total number of some selected vehicles from 1995 to 2018.

Overall, there is gradual increase in the number of vehicles on the road from 1997 to 2018. In 1996, there was re-registration of all vehicles and that can be seen in the upsurge of all vehicular types during this period. DVLA normally does this to check for fraudulent registration. From 2008, the use of motorcycles has become popular among Ghanaians surpassing the use of private vehicles up to 2000 CC. From Figure 1, the use of private coaches is on a slight decline. On the other hand, private vehicles with engine capacity above 2000 CC is on the ascendancy. This can be attributed to the bad nature of some roads in many parts of the country which require these vehicles to access with minimal breakdown of one's vehicle.

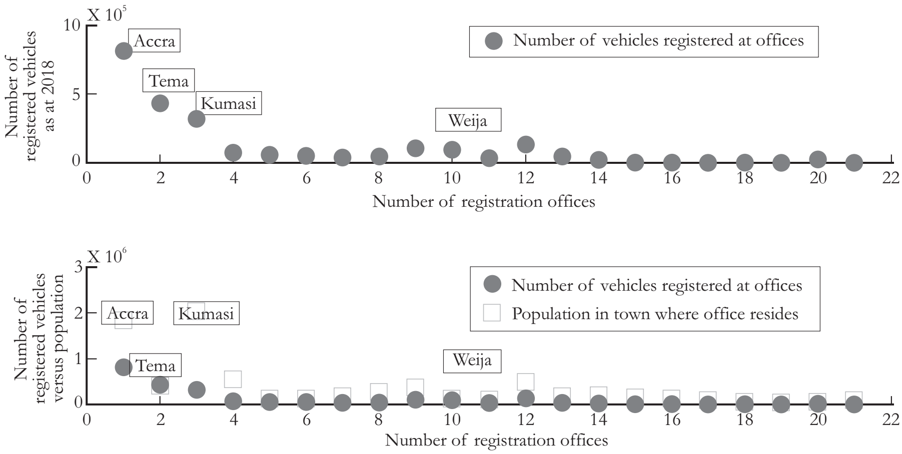

Figure 2: Upper plot: Number of registered vehicles across Ghana as at December 2018
Lower plot: Number of registered vehicles and the population in the city where office resides

The number of registered vehicles for the various offices at the end of December 2018 lies in [701, 816473], with Accra recording the greatest number of registered vehicles. This can be seen from the upper plot of Figure 2. Other offices with high number of registered vehicles are Tema, Kumasi and Weija. The office with the least number of registered vehicles is Danu, in the Volta region of Ghana. The lower plot compares the number of registered offices with the population of the town where the office resides. It can be seen from the lower plot of the Figure 2 that although Kumasi is the third in terms of number of vehicles, it has the largest population. Table 6 in the appendix shows numerical numbers that have been used to designate the registration offices. For example, '1' stands for Accra, '2' for Tema, '3' for Kumasi, and so on.

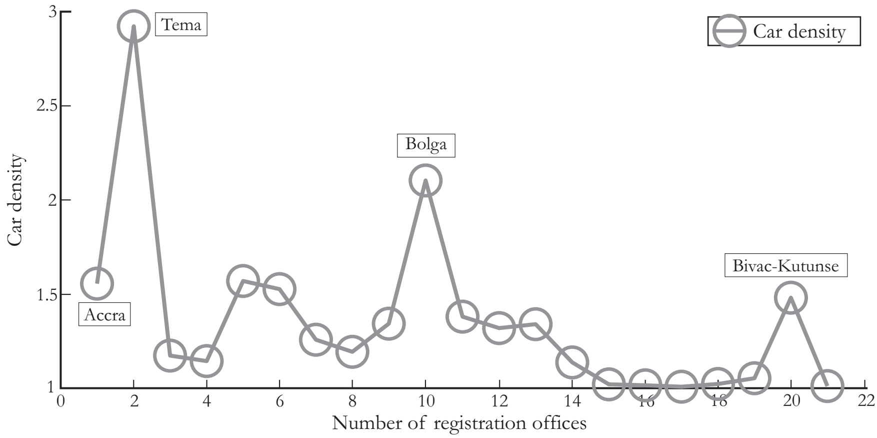

Figure 3: The car densities for the 21 registration offices.

The car density, $K_j = e^{\frac{N_j}{P_j}}$, j=1,...,21, is depicted in Figure 3. Tema has the greatest concentration of vehicles and consequently has the greatest car density. Thus, people residing in Tema will pay the most for purchasing vehicle for their daily routines. The car density of vehicle registered in Tema is approximately two times that of a vehicle registered in Accra. This is followed by Bolga, Accra and Bivac-Kutunse.

We illustrate how much fees have to be paid using three different brands of vehicles: Mercedes-Benz C-Class, New Audi A1 Sportback 2019 and Toyota Camry 2018. From equation (2),

$$T_{ijt} = K_j S_i W_i M_t$$

Because DVLA does not keep records of mileage that comes for renewal of roadworthy certificates and vehicle registration, we assume that these three vehicles cover a mileage of 50000km within a given period t. The dimensions (surface area), of the vehicles are computed in kilometres to be consistent with the mileage. Also, the weights are computed in tons. The results obtained can be seen in Table 2 (see Appendix).

Note: The units of T_{ijt} is $tonskm^3$ and we have chosen 1 $tonskm^3$ to be equivalent 1 GH¢ in Table 2 above. It should also be noted that 1000kg is equivalent to 1 ton.

It can be seen from Table 2 the discrimination in the prices for the different registration offices. For example, the owner of Mercedes-Benz C-Class registered in Tema pays GH¢ 185.04 as fees and the same vehicle registered at Mampong pays GH¢ 63.81, about one-third of the fees charged at Tema. Also, observe the differences in the fees for the three categories of vehicles. Toyota Camry 2019 is the most expensive to use among the three vehicles for all registration offices largely because of the area it occupies on the road.

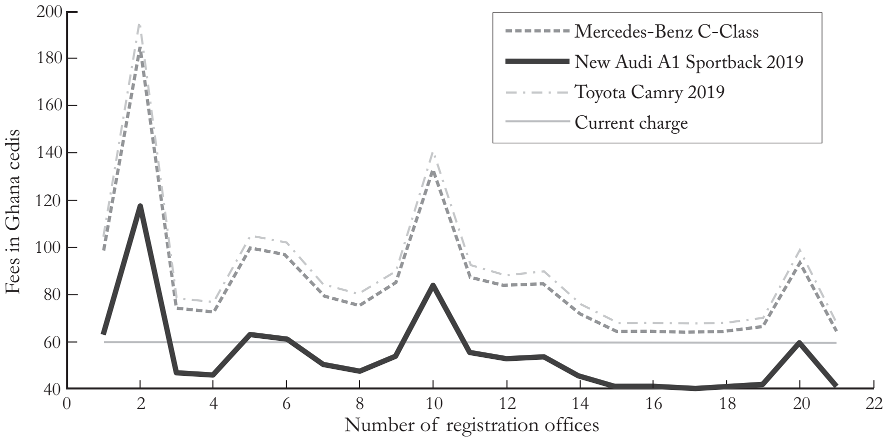

Figure 4: Fees for registration offices for different vehicles with current charge.

Figure 4 shows the fees for these vehicles with the current charge super-imposed. Clearly, Mercerdes-Benz C-Class and Toyota Camry 2019 are undercharged for all registration offices.

For registration of vehicles to be used on the road for the first time, we use equation (3), to determine the fees shown in table 3 (see Appendix) for *a year old* of all three vehicles. In computing the values shown, δ is measured in weeks and the dimensions of S_i are in kilometres.

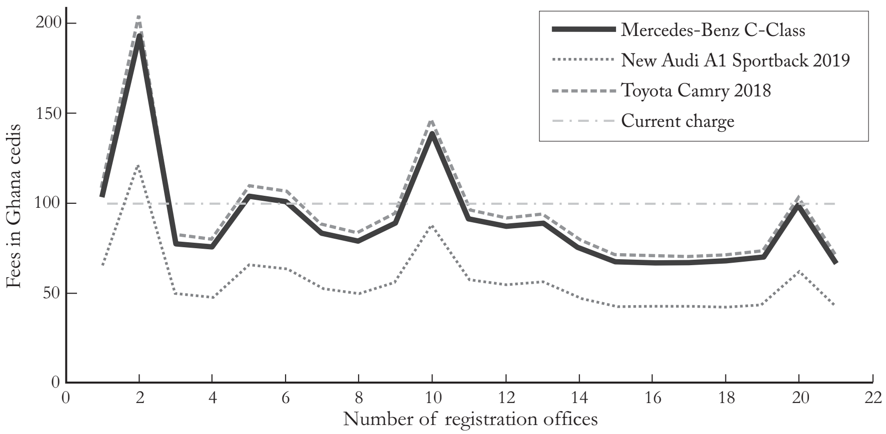

Figure 5: Fees for a year old three categories of vehicles at different registration offices with current charge imposed.

From Figure 5, the current charge is higher for New Audi A1 Sportback 2019 except at Tema registration office. The fees, however, rises relatively fast with the age of the vehicle especially for cities with high car densities.

Checking the fairness of the Luxury taxes

Table 5 shows the engine capacities of vehicles and the corresponding levies the government of Ghana imposed on August 1, 2018.

Table 5: Government levies of Luxury vehicles

Number	Engine Capacity (CC)	Levy (GH¢)
1.	2950-3549	1000
2.	3550-4049	1500
3.	Above 4049	2000

We use our models to determine how much should be paid for three categories of vehicles, one of each category of Table 5. These vehicles are Jaguar F-TYPE Coupe with engine capacity 3000CC, Chevrolet Colorado ZR2 with engine capacity 3600CC and 2019 Jeep Cherokee Sport with engine capacity 5900CC. We assume that these three vehicles cover a mileage of 50000km within a given period *t*. The fees for each category of vehicle is as depicted in Figure 7. Even if the mileage is doubled, the fee at the greatest car density does not reach the least value indicated in Table 5.

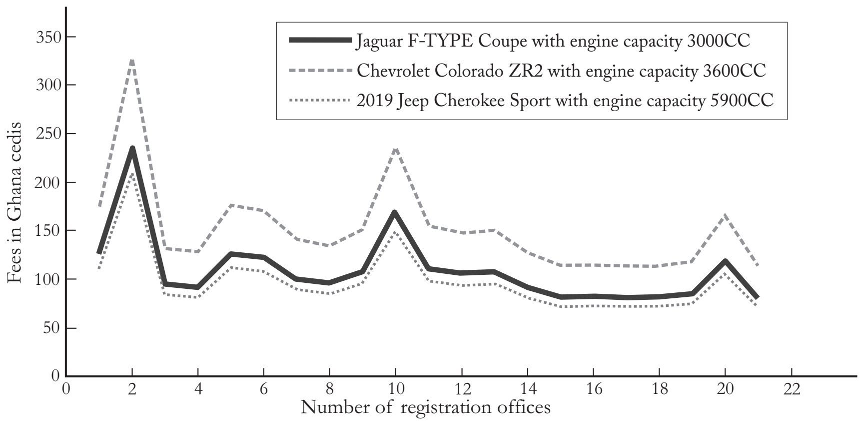

Figure 6: Fees for luxury vehicles with engine capacity 3000CC, 3600CC and 5900CC at different registration offices.

As can be seen from Figure 6, these fees are well below the levies that the government imposed even for cities with high car densities.

Suppose that $m_p = 200$ and that $L_t = 2$ hours or 120 minutes, Table 4 (see Appendix) shows the charges for the three categories of vehicles for the different cities where a breakdown of vehicle occur. For example, in computing the charges for Mercedes-Benz C-Class, using equation (4), we have

$$\check{T}_{ijt} = 200 + 120 \times K_j \times 4648 \times 1810 \times 1505 \times 10^{-10},\ j = 1,...,21 \quad (5)$$

where we have adopted the convention that $1\text{km}^2\text{kg min}=1\text{GH¢}$

It should be noted that in computing $\check{T}_{ijt}$, the dimensions of S_i were kept in kilometres and the length of time vehicle is abandoned in minutes. Consequently, the units of the second term of $\check{T}_{ijt}$ is $\text{km}^2\text{kg min}$.

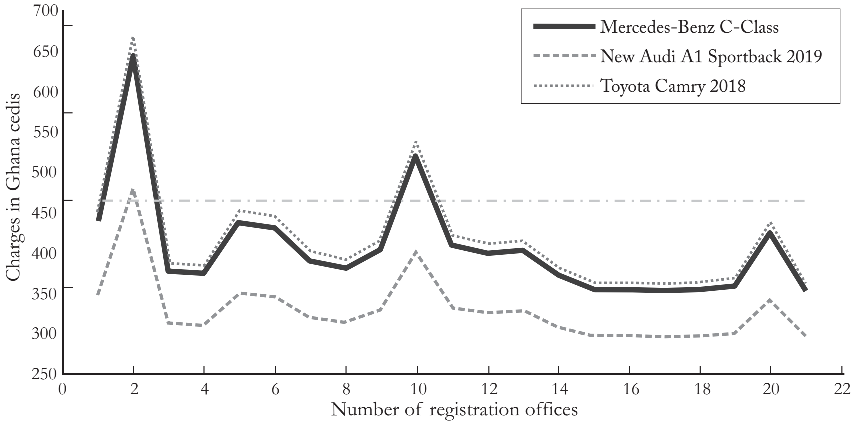

Figure 7: Charges for abandoned vehicles for three categories of vehicles

It can be seen from Figure 7, that abondoning vehicles in the Tema area is most expensive.

Note: In computing these values, the units of measurements can be altered to fit any country.

Next, we use equation (3) to determine the registration fees for *a year old* of these vehicles.

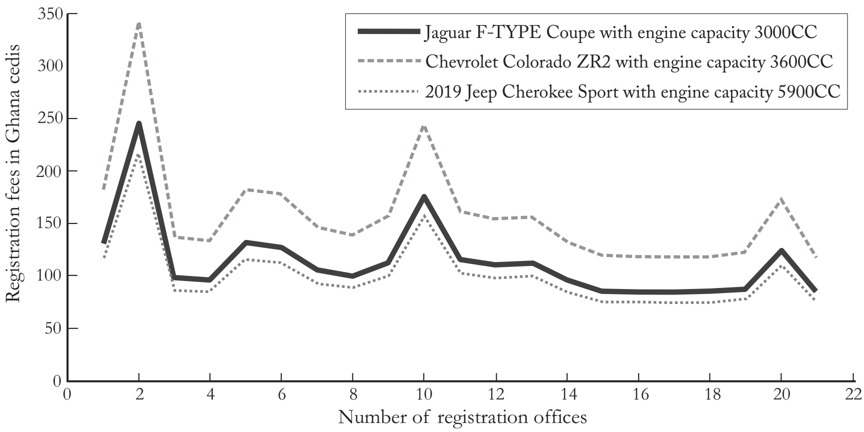

Figure 8: Fees for a year old of three categories of luxury vehicles at different registration offices

Again, we see from Figure 8 that the fees are lower than the levies charges by the government even for vehicles within 2950CC-3549CC for all registration offices. It should, however, be noted that these fees rise relatively faster with the age of the vehicle especially for cities with high car densities.

Summary, Conclusion and Recommendations

In this paper we developed models that incorporate the density of car usage in a locality, size and damage caused by vehicles in vehicle registration and renewal fees. The paper also provides models for the cost of removal of vehicles that park at unauthorized places and broken-down vehicles on highways. Specifically, we found that Mercedes-Benz C-class and Toyota Camry 2019 is undercharged across all vehicle registrations centres across the country, except the Tema and Bolga centres which charge 60 and 20 Ghana cedis above the national charge of 60 Ghana cedis. For a year-old cars, we found that the current charge for New Audi A1 sportback 2019 is high, except for the Tema centre which charges 20 Ghana cedis above the national average. Our model also shows that charges for abandoning vehicles on the road are more expensive in the Tema area. This confirms the increase in the charges for car usage in high vehicle concentrated areas.

Our model provides a good decision tool that can be modified to fit any jurisdiction. It allows the decision maker to incorporate the regions of high vehicle concentration in setting vehicle renewal and registration fees. Our models show that some vehicles pay far less for vehicle registration and renewal of roadworthy fees. This strategy of price setting can be used to compel people to move from highly populated areas with high concentration of vehicles to regions of sparsely populated areas to encourage the decongestion of roads nation-wide. Businesses can also be motivated for setting up branches in sparsely populated areas with less concentration of vehicles to benefit from low vehicle registration and renewal fees. This in the long run allow free movement of people, goods and services and serve as source of revenue generation to the Ghana government especially in cities with high vehicle concentration. Also, because there is a direct link between the fees people pay and the mileage covered by the vehicle, some people will be motivated to use their vehicles wisely and will further assist in decongesting roads. In addition, vehicle owners will be conscious on the length of time they have to leave their vehicles on the road anytime there is a break down and will go a long way to free the roads from unnecessary traffic build up. It will help minimize accidents on our roads especially when a vehicle breaks down in a curve.

Consequently, there should be a regulation that compels vehicle owners who register their vehicles in regions of greater usage, to operate them in those regions. Failure to comply should result in heavy fines. Also, DVLA currently do not keep records of the mileage of vehicles that come for registration and renewal of roadworthy certificates at each renewal date. These records have to be kept to facilitate the computation of fees to be paid at each renewal date. We call for the abolitions of toll charges on all government managed roads as they unnecessary slow down vehicular movement. Moreover, it is unclear whether funds collected at these toll gates are properly accounted for by toll gate collectors. Once a vehicle pays its yearly (semi-annually, or quarterly rate at DVLA office), that should suffice.

There is the need for government to take the issue of towing of vehicles seriously at least in major cities and towns. However, this service is currently either not properly organized or unavailable especially for heavy vehicles.

Study Limitation

The study uses figures from the last census conducted by the Ghana Statistical Service which is almost a decade old. This will have effect on the estimated car densities and the consequently the prices vehicle must pay for the regions where the vehicles reside.

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APPENDIXES

Table 2: Renewal fees for three categories of vehicles at different registration offices

Registration office	Type of Vehicle		
	Mercedes-Benz C-Class 50000 mileage (Fees in GH¢)	New Audi A1 Sportback 2019 50000 mileage (Fees in GH¢)	Toyota Camry 2018 50000 mileage (Fees in GH¢)
Accra	98.46	62.15	104.11
Tema	185.04	116.80	195.66
Kumasi	74.13	46.79	78.39
Takoradi	72.45	45.73	76.61
Sunyani	99.24	62.64	104.93
Koforidua	96.43	60.87	101.96
Cape Coast	79.52	50.19	84.08
Ho	75.50	47.66	79.83
Tamale	85.04	53.68	89.92
Bolga	132.96	83.92	140.59
Wa	87.17	55.02	92.17
Weija	83.33	52.60	88.11
Obuasi	84.62	53.41	89.48
Techiman	72.00	45.45	76.13
Denu	64.47	40.70	68.17
Bekwai	64.27	40.57	67.96
Mampong	63.81	40.28	67.48
Nkawkaw	64.40	40.65	68.09
Tarkwa	66.39	41.91	70.20
Bivac-Kutunse	93.61	59.08	98.98
Sked Somanya	63.95	40.36	67.62

Table 3: Registration fees for *a year old* three categories of vehicles at different registration offices

Registration office	Type of Vehicle		
	Mercedes-Benz C-Class (Fees in GH¢)	New Audi A1 Sportback 2019 (Fees in GH¢)	Toyota Camry 2018 (Fees in GH¢)
Accra	102.68	64.81	108.58
Tema	192.97	121.80	204.05
Kumasi	77.31	48.80	81.75
Takoradi	75.55	47.69	79.89
Sunyani	103.49	65.32	109.43
Koforidua	100.56	63.47	106.33
Cape Coast	82.93	52.34	87.69
Ho	78.74	49.70	83.26

Table 3 (cont'd)

Registration office	Type of Vehicle		
	Mercedes-Benz C-Class (Fees in GH¢)	**New Audi A1 Sportback 2019 (Fees in GH¢)**	**Toyota Camry 2018 (Fees in GH¢)**
Tamale	88.68	55.98	93.77
Bolga	138.66	87.52	146.62
Wa	90.90	57.38	96.12
Weija	86.90	54.85	91.88
Obuasi	88.25	55.70	93.31
Techiman	75.09	47.39	79.40
Denu	67.24	42.44	71.10
Bekwai	67.03	42.31	70.88
Mampong	66.55	42.01	70.37
Nkawkaw	67.16	42.39	71.01
Tarkwa	69.24	43.70	73.21
Bivac-Kutunse	97.62	61.62	103.22
Sked Somanya	66.69	42.09	70.52

Table 4: Fees for three category of vehicles that break down on roads at different towns

Registration office	Type of Vehicle		
	Mercedes-Benz C-Class (Fees in GH¢)	**New Audi A1 Sportback 2019 (Fees in GH¢)**	**Toyota Camry 2018 (Fees in GH¢)**
Accra	436.31	349.16	449.87
Tema	644.09	480.31	669.59
Kumasi	377.92	312.30	388.13
Takoradi	373.87	309.75	383.86
Sunyani	438.17	350.33	451.84
Koforidua	431.43	346.08	444.71
Cape Coast	390.84	320.46	401.80
Ho	381.20	314.37	391.60
Tamale	404.09	328.83	415.81
Bolga	519.10	401.42	537.42
Wa	409.20	332.05	421.21
Weija	399.98	326.23	411.46
Obuasi	403.08	328.19	414.74
Techiman	372.80	309.07	382.72
Denu	354.73	297.67	363.62
Bekwai	354.25	297.37	363.11
Mampong	353.15	296.67	361.94
Nkawkaw	354.56	297.56	363.43
Tarkwa	359.34	300.58	368.49
Bivac-Kutunse	424.65	341.80	437.55
Sked Somanya	353.47	296.87	362.28

Table 6: Registration offices and the numerical designation

Registration office	Number
Accra	1
Tema	2
Kumasi	3
Takoradi	4
Sunyani	5
Koforidua	6
Cape Coast	7
Ho	8
Tamale	9
Bolga	10
Wa	11
Weija	12
Obuasi	13
Techiman	14
Denu	15
Bekwai	16
Mampong	17
Nkawkaw	18
Tarkwa	19
Bivac-Kutunse	20
Sked Somanya	21

Succession Planning, Employee Retention and Career Development Programmes in Selected Organisations in Ghana

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https://dx.doi.org/10.4314/ajmr.v27i1.9

Abstract
This paper examined the relationship between succession planning and employee retention, as well as the moderating role of career development program on the relationship between succession planning and employee retention. Using the cross-sectional design, 188 employees were conveniently sampled from four corporate organisations in Ghana to complete questionnaires on succession planning, employee retention and career development. The Hierarchical Multiple Regression was used to test the hypotheses. The results indicated that succession planning significantly predicted employee retention. Career development programmes also moderated the relationship. The results suggest that, the influence of succession planning on employee retention was moderated by career development programmes, such that, succession planning has more significant influence on employee retention when career development programmes are high rather than low. The study recommends the need for managers to develop strategic innovation in career development programmes to train and develop employees to enhance succession planning and employee retention in their organisations.

Keywords: Succession Planning, Training and Development, Employee Attrition, Job embeddedness, Human Capital Development.

Introduction

The 21st-century environment has been very erratic and chaotic characterized by employee poaching and organisational espionage. High-performance organisations do not develop by chance but rather a competitive workforce which is the result of years of effective planning and successful plan implementation (Ingram, 2014). Over the years, organisations have had issues with strengthening and retaining their workforce due to unpredicted events. These unpredicted events including demand fluctuations, leadership gap due to retirement, sickness, death and resignation, has led to a huge human resource gap. This phenomenon has made human resource planning a key management role in most organisations. Organisations have therefore begun quantifying these unpredicted events and are putting in place strategies and techniques to overcome them (Armstrong, 2003; Rothwell, 2005; Negrea, 2008).

Taylor (2012) identified succession planning as one of such strategies being used to address the issues of human resource gap. Succession planning is the attempt to plan for the right number and quality of managers and key-skilled employees to cover retirement, death, serious illness or promotion, and any new positions which may be created in future organisation plans (Sambrook, 2005). According to Hills (2009), it is a smart workforce management strategy that can drive retention of talent throughout the organisation and make sure that the organisation has the skills it needs in place to respond to the rapidly shifting sands that make up today's business environment. As such, succession planning and employee retention form part of human resource planning and have a direct impact on reducing staff turnover. Hewitt Associates (2004) identified retaining key talent or skills and succession planning as the two most important workforce planning issues.

Research in succession planning has also identified challenges that organisations have had with succession planning among which include career development of employees and intention to stay. (Chikumbi, 2011; Kataike, 2013; Miles and Dysart, 2008; Avanesh, 2011; Purcell, 2003).

In Ghana, top managers mostly show reluctance in training and developing the careers of junior staff towards future human resource gaps. This is because those trained are seen as a threat to the very existence of senior management. This has endangered the efforts and spirit of succession planning in the organisations within the country (Yanney, 2017). Lowan and Chisoro (2016) further observed that one of the major drawbacks in establishing a succession plan in developing countries is the lack of support from top company executives. Citing the example of corporate politics, Lowan and Chisoro (2016) indicating that instead of supporting a system approach to succession planning using career development opportunities, top managers rather use the corporate ladder to promote friends and allies, while punishing enemies, regardless of talent or qualifications.

Career development of employees is said to be directly linked to their satisfaction, such that, employees feel valued from their employers when allowed to develop their careers (Gerbamn, 2000). Employees who feel dissatisfied with their job are likely to leave the organisation just as the organisation would also want to retain its golden employees to achieve its objectives and long-term succession goals (Duggan & Horton, 2004).

Career development encompasses various alternatives such as developing abilities, preserving current skills and getting ready for the future ahead of just receiving a promotion. The career development of employees has therefore gained greater policy attention in recent times. In an environment where organisations and individuals need to make more complex career and life choices, career development programmes have become even more important (Asumeng & Assan, 2015; Kaya & Ceylan, 2014).

From the background, it is imperative to highlight some essential gaps that will define the present study. First off, the issue of identifying and preparing the next generation of leadership talent is consistently cited by executives and boards as one of their most critical business priorities. Despite this, most organisations consistently rate their succession planning practices as less effective (Busine & Watt, 2005). For example, between 40% and 65% of companies around the world have a formal succession planning process in place (Garman & Glawe, 2008) which is to some extent woefully inadequate to say the least given its relevance in organisational development.

The total cost of employee turnover is about 150% of an employee's annual salary because of the cost of filling vacant positions, lost in productivity from vacant jobs and the cost of training new employees increases the operational cost of a firm (Ramlall, 2003). The negative effect of employee turnover and the challenges involved in retaining valuable employees is not exclusive of some developing countries like Ghana. Many organisations in Ghana have taken to poaching "already baked" talents from other organisations other than developing "homebred" talents. The question however is, are these people leaving because of dissatisfaction? What are the triggers of the dissatisfaction? Could the absence of career development programmes and proper succession plans play a role? Could this not be a disincentive to existing employees who do not perceive any career and professional progression, hence decide to leave? This study tested a model where career development program moderates the relationship between succession planning and employee retention. Essentially, this study examined two key objectives:

- The effect of succession planning on employee retention.
- The moderating role career development programmes play in the relationship between succession planning and employee retention.

Theoretical Background And Hypotheses

The Agency Theory

The Agency theory (Eisenhardt, 1989) provides a framework for understanding the relationship between succession planning, career development and employee retention. The theory proposes that agents, that is employees, are motivated by self-interests and might participate in the adverse selection or moral hazard, including staying or leaving the organisation, with the principals, that is employers; aptly known as agency cost. The theory suggests that this cost can be mitigated by integrating the employee's interests, that is career development, and being integrated into the succession plan program, with those of the employers, that is retention of skilled employees, who can also be integrated into the succession plan (Cruz et al., 2010). On the basis of this theory, offering employee development activities, such as career development through succession plans, become necessary to discourage the turnover intentions which practices cost the organisations adversely and make it lose their competitive edge.

Thus, development activities alter the employee's intention to quit the firm which results in minimizing the sources of agency cost (Cummings et al., 2007). According to Gomez-Mejia et al. (2001), agency costs, which is skilled workforce turnover, can be controlled by providing incentives and bonuses to workers mainly in the form of professional growth.

This study, therefore, proposes that the agency theory predicts the employee's behaviours toward making turnover intentions and how employers plan strategies to control them while strengthening the relationship of principal-agent, mainly by providing the employees development opportunities, that is succession planning, career development and job security, as a way to mitigate the turnover risk.

Relationship between succession planning and employee retention

The lack of a "fill-in scheme" in most organisations in Ghana specifically and Africa at large has spawned technical hitches filling in vacancies in such organisations (Mensah *et al.* 2016; Nana, 2013). This leads to profound displeasure among employees and the result is decreased performance and retention rates among high performers. As a result, research on employee retention has received some attention (Jiang & Klein, 2002) especially in the context of succession planning.

Hassan and Siddiqui (2019), investigated the impact of effective succession planning practices on employee retention: exploring the mediating roles using 300 respondents who are serving in the middle and lower level of management in the private organizations in Pakistan. Their findings revealed that effective succession planning practices had a meaningful and favourable connection with employee retention.

The Aberdeen Group (2005) also did a survey looking at retention and succession planning in the corporate workplace. They found that a clear correlation exists between executive retention and companies with formalized retention and succession programs. More specifically, the survey revealed that a strong majority of companies that reported 1% to 5% average turnover rates had formal retention (89%) and succession program respectively (84%). The question however is; could the same finding be established in the case of non-management employees? Another study by Eshiteti, Okaka, Maragi and Akerele (2013) to establish the effects of succession planning programs on staff retention in the sugar companies of Western Province, Kenya revealed that more employees had high job satisfaction because of the perceived presence of a succession planning process, which gives them hope of being next in line of management. This according to them had a positive effect on the retention of staff in the sugar firm.

Another study by Tunje (2014) looked at succession planning practices and employee retention in large media houses in Kenya. The study revealed that there is a positive relationship between succession planning practices and employee retention. Additionally, the findings suggested that succession planning practices are implemented in the media houses though only for key positions and not all positions. What could be the outcome of succession planning practices if it is applied to all positions, would the outcome be the same?

Hypothesis 1: Succession planning will significantly predict employee retention.

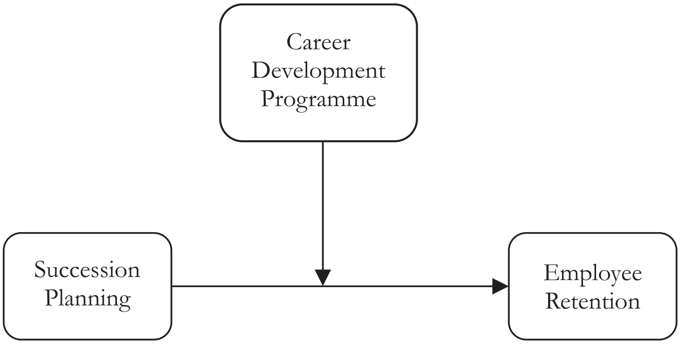
Career development programme as a moderator in the relationship between succession planning and employee retention

Studies suggest that, for an organisation to have a successful succession planning program, it must identify its long-term goal and by so doing identify and understand the developmental needs of its employees (Hutchings, Zhu, Brain, Cooper, Zhang & Shao, 2009; Heathfield, 2010). As well, organisations must ensure that all key employees understand their career paths and the roles they are being developed to fill (Bowes, 2008). According to Purcell (2003) providing career opportunities is one of the surest ways to a successful succession planning program. In a study among information technology workers in the United States, Liu (2004) found that the provision and availability of development opportunities as a human resource supportive tool enhanced loyalty among the workers and by extension improved employee retention. Additionally, a study by Kataike (2013) found that training opportunities emerged as one of the factors which affected the retention of employees of which management had neglected. Ghazali (2010) also observed from their study that human resource practices including training and development of employees had a significant relationship with intention to stay. Further, Mapelu and Jumah (2013) in a study revealed that employee development significantly affected employee turnover positively. Training and development, therefore, is an investment in employees' productivity and retention as it provides for career progression and job satisfaction of employees over a long period, hence a good way to increase the motivation of employees and retain skilled workers within organisations (Bowes, 2008; Hutchings, Zhu, Brain, Cooper, Zhang & Shao, 2009).

Employers who have more skillful employees as a result of career development can expect them to navigate their internal labour markets more effectively which can reduce the problems associated with succession (Cedefop, 2008). Also, when struggling employees benefit from such additional job-related knowledge they feel loved by the organisation hence influences them to be with the organisation. The conclusion drawn from these studies suggests that career development can significantly influence the relationship between succession planning and employee retention.

Hypothesis 2: Career development programme will moderate the relationship between succession planning and employee retention such that, it will enhance the relationship.

The proposed conceptual model indicates that succession planning will significantly predict employee retention. Also, career development programme is proposed to moderate the relationship between succession planning and employee retention.



Methodology

Research Design and Setting

The cross-sectional survey design was used for the study. Participants in the study were drawn from varying backgrounds, different organisations, job positions, departments, age, tenure and gender at one point in time. The study was conducted in the Greater Accra Region of Ghana with an emphasis on both the manufacturing and service sectors of private and public organisations. The reason is that most studies in Ghana concentrate on just the manufacturing sector and mostly in private organisations; regardless of the significant contributions of the service sector in Ghana.

Population

The population for this study was selected from the Greater Accra Region, the industrial hub of Ghana, which hosts the seat of government. Accra is the second most populated city in Ghana, with many inhabitants from different parts of the country working in various organisations within the Greater Accra Region. Most of the public and private organisations are concentrated in Accra and Tema than in the other regions in Ghana. Four main organisations were selected based on their proximity, accessibility and their willingness to take part in the study. The four main organisations used for the study include two public sector organisations (Cocoa Processing Company & Ghana Civil Aviation Authority) and another two from the private sector (Pioneer Food Cannery & Ecobank Ghana Limited). Ghana Civil Aviation Authority and Cocoa Processing Company were specifically chosen because of their history of change of leadership with every change of government and the high political influence in their recruitment exercise. These changes of leadership subsequently come with changes in policies which normally creates uncertainty among employees affecting their behaviour. Pioneer Food Cannery and Ecobank Ghana Limited were also selected as the population of interest in view of the fact that, they are vibrant on the job market and very competitive. Finally, these companies were selected because they serve a large market in Ghana. As suggested by Hofstede, Neuijen, Ohayv and Sanders (1990), instead of one corporation in many countries, we should study many different organisations in one and the same country. To obtain better reliability and validity of the data, the study used a sample from different sectors on one hand and samples from different organisations on the other hand (Yuorpor, 2013).

Sample and Procedure

The convenience sampling technique was used in selecting the organisations and participants in this study. This was because, the study considered organisations with succession plans, geographical proximity, their availability and accessibility at the time of the study, and also their willingness to volunteer for the study (Dörnyei; 2007). To collect the data, introductory letters were sent to the organizations to seek their authorization for this study. Upon granting permission to carry out the study, the employees were informed about the purpose of this study and asked to voluntarily consent to participate. Employees who agreed to participate in the study were assured of confidentiality regarding their personal information provided to the questions asked. Two hundred and twenty (220) questionnaires were given to the participants to complete within 30 minutes after which they were retrieved, scored and analyzed. Out of this total, one hundred and ninety-seven (197) were completed and returned. However, only one hundred and eighty-eight (188) were used in the analysis, resulting in a response rate of 85.45%. Nine (9) questionnaires were excluded from the data analysis due to missing values as responses to some items in the questionnaires were left blank.

Survey Instruments

Succession Planning

A 25-item scale (Salaman, 2014) was used to measure succession planning. It was used in her study titled, "Relationship between succession planning practices and employee retention in large media houses in Kenya." Responses were scored on a 5-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). Examples of the items include: *"In my organisation, succession planning puts into consideration all key positions"* and *"In my organisation, employees are internally offered internship opportunities to assist them to advance their careers"*. The Cronbach alpha value of the scale was .84.

Employee Retention

An 11-item scale (Kyndt, Dochy, Michielsen & Moeyaert, 2009) was used to measure employee retention. It was used in their study of IT workers titled, "Employee Retention: Organisational and Personal Perspectives". Responses were scored on a 5-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). Examples of the items include, *"I foresee a future for myself within this company"* and "*It doesn't matter if I work for this company or another, as long as I have work"*. The Cronbach alpha value of the scale was .75.

Career Development Programme

Also, a 12-item scale (Ameeq & Hanif, 2013) was used to measure career development in the context of organisational training and development. Respondents were asked to report how much they agreed with the items on a scale from 1 (strongly disagree) to 5 (strongly agree). Examples of items on the scale include, *"Our organisation conducts extensive training programs for its employees in all aspects of quality"* and *"There are formal training programs to teach new employees the skills they need to perform their jobs"*. The Cronbach alpha value of the scale was 0.88.

Data Collection Procedure

A letter seeking permission to conduct the study was sent to the Human Resource

Department of the selected organizations for approval, followed by an informed consent form to employees who voluntarily agreed to participate in the study. Questionnaires were put in an envelope and given to Human Resource Officers in the selected organisation who assisted in administering them. The questionnaires covered the introductory part explaining the purpose of the study, instructions for completing the questionnaires, the demographic details of participants and the study measures. Participants were assured of confidentiality and anonymity of their responses. The data collection lasted for four weeks. Participants submitted their responses at the Human Resource Departments which were put in envelops, sealed and collected personally by the researchers.

Ethical consideration

The consent of participants was sought by making available an informed consent form after which willing participants accepted to take part in the study. It was ensured that the information collected from participants were kept confidential. Steps were taken to ensure that physical or psychological harm was not caused to the participants. The 2001 American Psychological Association guidelines on confidentiality and informed consent were duly followed.

Data Analysis

Data were analysed using the Statistical Package of Social Sciences (SPSS) version 22.0. The analyses were conducted in two parts. The first part was the preliminary analysis while the second part was the test of the hypothesized model in the study. The preliminary analysis comprised descriptive and reliability analysis, factor analysis and correlation analysis of the study variables.

In the descriptive statistical analysis, firstly, the means, standard deviations, minimum and maximum scores of participants on the variables were examined. Also, it examined the skewness and kurtosis values of the measures to determine whether the scores were normally distributed to warrant the use of parametric statistics data analytic techniques. Secondly, reliability analysis of the measures was run to determine their internal consistency using the Cronbach alpha values. To establish the construct validity and whether items that make up the measures would yield factor loadings that show they could be considered part of a single construct, factor analysis was done using the principal component analysis. Reliability analysis and factor analysis would help to determine if the scales have acceptable psychometric properties, and measured what they intended to measure in Ghanaian organisational settings. Finally, correlation analysis was done using the Person Product Moment Correlation to establish the relationships between the measures, for further regression analysis for testing the hypothesized model for the study.

The hypothesized model of the study was tested using the hierarchical multiple regression and moderation analysis. Hierarchical multiple regression analysis was run to assess whether the dependent variable can be predicted from a set of independent (or predictor) variables and further to increase the efficiency of analysis. In the moderation analysis, the four stages proposed by Baron and Kenny (1986) were duly followed. Firstly, the variables (succession planning (independent/predictor variable); career development programme (moderating variable/moderator; and employee retention (dependent variable/outcome variable) were standardized to clean the data of the effect of any multicollinearity. Secondly, the interaction effect (predictor X moderator) was calculated using the standardized values. Thirdly, the outcome variable was regressed; this was done by first entering the predictor variable in the first block, secondly, the moderator was entered into the second block and thirdly, the interaction effect was entered into the third block. In the fourth and final stage of the moderation analysis, the dependent variable was regressed on the predictor, moderator and the interaction between the two. The outcome of this process allowed for analysis of the two hypotheses/test of the hypothesized model of the study.

Results And Discussion

Demographic Characteristics of Respondents

The demographic characteristics of respondents are given in terms of their age, highest education, gender, tenure, job positions in the organisations and type of organisations they work. Table 1 provides details of the demographic characteristics of the respondents and the type of organisations they work in.

Table 1: Demographic Characteristics Respondents

Variable	Freq.	%	Variable	Freq.	%
Age			**Tenure**		
20-29 years	59	31.4%	0-2 years	50	26.6%
30-39 years	45	23.9%	3-5 years	41	21.8%
40-49 years	52	27.7%	6-10 years	45	23.9%
50 years above	32	17.0%	11 years above	52	27.7%
Highest Education			**Job Position**		
Masters	50	26.6%	Management	24	12.8%
Bachelor's Degree	100	53.2%	Senior Staff	73	38.8%
HND	38	20.2%	Junior Staff	91	48.4%
Gender			**Type of Organisation**		
Male	99	52.7%	Pubic	89	47.34%
Female	89	47.3%	Private	99	52.66%

Source: Constructed by authors based on field data

From Table 1, the age of the respondents ranged from a minimum of 20 years to 50 years and above, with the majority (31.4%) of them being between the ages of 20 to 29 years. On their levels of education, the majority of the respondents (53.2%) had a bachelor's degree with a few of them (20.2%) having at least a higher national diploma. Males (52.7%) were more than females (47.3%) in the sample. The difference is however not too much as to make the sample overly skewed towards males. With regards to the years of stay in the selected organisations, most of the respondents (45.7%) have spent between 3 to 10 years in their orgainsations whiles 27.7% of them have spent more than 11years with their organisations. This implies that most of the respondents have spent enough time in their oranisations to know the policies and practices of their organisations. Table 2 further shows that majority of the respondents are junior staff (48.4%) whiles 12.8% and 38.8% are managers and senior staff respectively. The data also suggests that 52.66% of the respondents are in private organisations whiles 47.34% are in the public organisation.

Descriptive Statistics and Reliability Analysis

Descriptive data of the study was obtained from the participants' responses and the findings are presented in Table 2.

Table 2: Summary of Descriptive Statistics and Reliability Indices of Study Variables (N=188)

Variables	Mean	SD	Minimum	Maximum	Skewness	Kurtosis	Alpha
Succession Planning	85.73	12.62	46	112	-.73	.40	.86
Employee Retention	40.13	5.23	20	55	-.40	1.29	.63
Career Development Program	47.47	6.76	21	59	-.83	.89	.90

From Table 2, the results indicate that all the variables in the study were normally distributed as the skewness and kurtosis values were between -2/+2. Hence the data were amenable to the appropriate parametric statistical analysis. Also, in regression analysis, the dependent variable must be normally distributed (Tabachnick, & Fidel, 2001). The Cronbach's alpha values observed for the variables were .86, .63, and .90 yielding reasonably acceptable results, hence the scales were reliable. The mean values indicated that on the average employees perceived that succession planning was practiced in their organisation and they were more likely to stay with the organisation. The mean values also indicated that on the average employees perceived that career development programs were provided by their organisations though the value is low.

Factor Analysis of Succession Planning, Employee Retention and Career Development Programmes

A principal component factor analysis of the items in the scales was conducted. This was done to ensure that the scales have construct validity. Thus, to ensure that the scales measured what they intended to measure (Tabachnick & Fidell, 2001) in the Ghanaian organisational context. The principal component analysis revealed the presence of components with eigenvalues exceeding 1, explaining for a cumulative variance of 57.18%, 57.53% and 47% for succession planning, employee retention and career development program respectively. Tables 3 to 5 show the results of the principal component analysis of the items of the scales used in the study.

Table 3: Factor loadings based on a principal component analysis of the twenty-five items on the Succession Planning Scale (N=188).

Item	Factor loading
1. In my organisation, succession planning puts into consideration all key positions.	.57
2. In my organisation, performance appraisals are always conducted annually.	.54
3. Job rotation is well implemented across all departments in my organisation.	.60
4. In my organisation, rewards are given to all employees without any form of discrimination.	.62
5. Bonuses and incentives are benefits given to all employees in my organisation based on their performance.	.70
6. In my organisation, management supports employees who wish to advance in their careers through the Education Policy and sponsorships for training.	.71
7. In my organisation, employee career paths are clearly defined and are available from the HR Department.	.64
8. In my organisation, every year employees are always given feedback about their talent Reviews.	.58
9. In my organisation, training and development opportunities are available to all employees.	.53
10. In my organisation, it is evident that managers and supervisors have effective management and leadership skills.	.59
11. In my organisation, occasionally employees are allowed to define their rewards.	.67
12. In my organisation, mentoring and coaching are well practiced by most managers and supervisors.	.58
13. In my organisation, talented employees are always considered for sponsorships.	.52
14. In my organisation, there are opportunities for employees to continuously improve their skills.	.57
15. In my organisation, the pay and grading structures allow employees to defined their own remunerations.	.79
16. In my organisation, succession planning is strictly considered for top level management.	.67
17. In my organisation, employees are usually recruited from diverse demographic backgrounds.	.42
18. In my organisation, the succession plan encourages promotion from within strictly based on merit.	.65
19. In my organisation, rewards are always given to talented employees.	.65
20. In my organisation, any changes in HR policies are communicated to all employees.	.54
21. Talented employees are always attracted to join my organisation due to its good reputation in retaining talent.	.67
22. In my organisation, diversity management policy disregards any form of discrimination against gender, religion and sex.	.51
23. In my organisation, there are flexible rewards and benefits that cater for family and individual needs/preferences.	.61
24. In my organisation, we have an "open door policy" which enables smooth communication between management and employees.	.61
25. In my organisation, employees are internally offered internship opportunities to assist them advance their careers.	.69

Extraction method: Principal Component Analysis

Table 4: Factor loadings based on a principal component analysis of the eleven items on the Employee Retention Scale (N=188).

Item	Factor loading
1. I'm planning on working for another company within three years.	.73
2. Within this company my work gives me satisfaction.	.61
3. If I wanted to do another job or function, I would look first at the possibilities within this company	.68
4. I see a future for myself within this company.	.70
5. It doesn't matter if I'm working for this company or another, as long as I have work.	.48
6. If it were up to me, I will definitely be working for this company for the next five years.	.68
7. If I could start over again, I would choose to work for another company.	.79
8. If I received an attractive job offer from another company, I would take the job.	.39
9. The work I'm doing is very important to me.	.69
10. I love working for this company.	.75
11. I have checked out a job in another company previously.	.45

Extraction method: Principal Component Analysis

Table 5: Factor loadings based on a principal component analysis of the twelve items on the Career Development Programme (N=188).

Item	Factor loading
1. Our organisation conducts extensive training programs for its employees in all aspects of quality.	.72
2. Employees in each job will normally go through training programs every year.	.63
3. Training needs are identified through a formal performance appraisal mechanism.	.68
4. There are formal training programs to teach new employees the skills they need to perform their jobs.	.73
5. I believe the social circle in the firm is expanding due to participation in the training program.	.68
6. I believe my promotion is a result of the induction of the training program.	.59
7. I believe that my set targets and objective are attained and identified by the firm through training programs.	.73
8. I believe that my pay scale has increased as a result of participation in appropriate training program or skill upgrade.	.65
9. I believe that more career paths will emerge and more opportunities will come my way after participating in any training program.	.62
10. Training has helped me in improving my overall required skills for work.	.74
11. In our organisation, Training motivates employees to be more committed towards organizational goals.	.75
12. My career path is more in shape due to my participation in the training program.	.68

Extraction method: Principal Component Analysis

These results indicate reasonably good measures/scales, and additionally, as indicated by their high-reliability coefficients (Alpha values, Table 3), the scales were valid instruments that measured what they intended to measure; succession planning, employee retention and career development program (Tabachnick & Fidell, 2001) in the Ghanaian organisational context.

Pearson Correlation among Study Variables

A Pearson correlation was done to establish the relationships between the study variables. The summary of the outcome is presented in Table 6.

Table 6: Pearson Correlation Matrix of the Relationships between Study Variables

Variables	1	2	3
1. Succession Planning	-	-	-
2. Employee Retention	.48**	-	-
3. Career Development Program	.68**	.45**	-

**. Correlation is significant at the 0.01 level (1-tailed).

Table 6 indicates a positively moderate correlation between succession planning and employee retention (r = .48, p < .01). Table 7 also indicates a positively high correlation between succession planning and career development program (r = .68, p < .01) and a positively moderate correlation between employee retention and career development program (r = .45, p < .01).

Table 7: Summary of the Hierarchical Multiple Regression for Career Development Programme on the Relationship between Succession Planning and Employee Retention.

Model	*B*	*SEB*	β	F	*p*
Step1: Constant	29.952	2.599			.000
SP	.115	.029	.278	15.636	.000
Step2: Constant	23.075	3.061			.000
SP	.069	.030	.167	16.053	.025
CDP	.227	.058	.288		.000
Step3: Constant	35.492	4.547			.000
SP	-.109	-.057	-.264	15.723	.060
CDP	-.010	.086	-.013		.909
SP*CDP	.003	.001	.657		.000

R^2 = .078, .148 and .204 for steps 1, 2 and 3 respectively. ΔR^2 = .073, .139 and .191 for steps 1, 2 and 3 respectively **p < .01

Hypotheses/Model Testing

The hypothesized model depicting the two hypotheses was tested using the hierarchical multiple regression analysis and moderation analysis. This was to determine the extent to which succession planning influences employee retention and the role career development plays in that relationship. This statistical analytic technique was used after a prerequisite significant correlation was established between the study variables (see Table 6). As indicated earlier, a four-stage approach (Baron & Kenny, 1986) was used in running the analysis. The result is presented in Table 7.

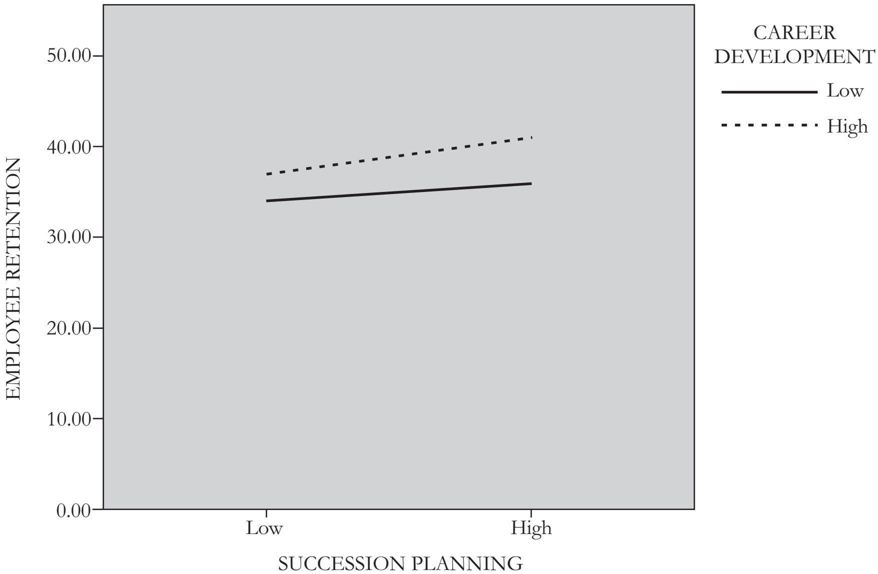
From Table 7, the analysis indicated that the model in step one was significant accounting for a 7.8% variance in explaining employee retention [$F_{(1, 186)} = 15.636$, $\varrho < .01$, $R^2 = .078$]. Thus, succession planning significantly predicted employee retention ($\beta = .278$, $p < .01$). Therefore, hypothesis one was confirmed. At step 2 of the model, career development program made a significant contribution (13.9%) in explaining the variance in employee retention, [$F_{(2, 185)} = 16.053$, $\varrho < .01$, $\Delta R^2 = .139$]. Thus, career development program significantly predicted employee retention ($\beta = .288$, $p < .01$). The third step revealed that the model accounted for 19.1% variance in employee retention [$F_{(3, 184)} = 15.723$, $\varrho < .01$, $\Delta R^2 = .191$]. Hence, in line with the prediction made, the interaction between succession planning and career development program was significant ($\beta = 657$, $\varrho < .01$). Thus, hypothesis two which states that career development programme will moderate the relationship between succession planning and employee retention was supported.

Aiken and West (1991) recommended that, for an appropriate interpretation of an interaction effect, a simple slope analysis should be conducted. Therefore, since an interaction effect was established in this moderation analysis, and in line with the view of Aiken and West (1991), a simple slope analysis was conducted (see Figure 2). Upon inspection of Figure 2, the interaction results indicated that the influence of succession planning on employee retention was moderated by career development programme, such that, the higher the level of the career development program, the greater the effect of succession planning on employee retention. However, as career development programme reduces, the effect of succession planning on employee retention also reduced.

Discussions

The focus of this study was to investigate the relationship between succession planning and employee retention. Also, the role of career development programme in the succession planning-employee retention relationship was explored. The first hypothesis sought to investigate whether succession planning will significantly predict employee retention. The results indicated that indeed succession planning significantly predicted employee retention positively ($\beta = .278$, $p < .01$). Specifically, succession planning accounted for 7.8% of the variance in explaining employee retention [$F_{(1, 186)} = 15.636$, $\varrho < .01$, $R^2 = .078$]. Thus, organisations that put in place proper succession planning policies are more likely to influence their employees' decisions to stay with the organisation. Succession planning may have led to the promotion of some employees and such employees may see such "move" as a kind of motivation, hence their decision to stay. Further, the finding is consistent with many other findings as reviewed in the literature (Aberdeen Group, 2005; Eshiteti et al. 2013; Hassan & Siddiqui, 2019). This finding contributes to the existing body of research by revealing that, formal succession planning program indeed helps in the retention of valuable workers as well as act as a tool to attract other potential employees. It has emerged as a strong factor influencing staff retention. Organisations that properly manage talent, through succession planning, are more likely to have the most success at keeping their employees loyal, which inevitably leads to a lower turnover rate, that is, a higher retention rate.

Figure 2: Summary of simple slope graph of career development moderating the relationship between succession planning and employee retention



Further, whiles the results of the analysis indicate that succession planning independently predicts employee retention, career development program plays a significant role in that relationship by strengthening it, such that, a higher level of career development program increases the retention rate of the employees. The moderation hypothesis was anticipated based on the premise that career development program according to the literature has a positive effect on employee retention. With this rationale, support was found for the moderating role of career development program on the succession planning-employee retention relationship in the current study. The result of this study is in line with the results of previous studies conducted as reviewed in the literature (Hutchings et al, 2009; Ghazali, 2010; Mapelu & Jumah, 2013). The reasons for this finding could be that career development programs are not just a sign of the organisation's commitment to employees but also a major mechanism for attracting, motivating, retaining good quality employees and also satisfying the career progression needs of the employees. These, therefore, influence the decision of the employee to stay with the organisation. As stated by Purcell (2003), providing career development opportunities is one of the surest ways to a successful succession planning programme.

Limitations, Conclusion, Implication of Findings and Future Research Direction

Limitations

The study utilized the cross-sectional design which limited its ability to draw cause-effect relationships. However, the moderating hypotheses help in establishing a relationship close to a cause-effect relationship (Field, 2005). This is because the moderation helped to identify the conditions under which the relationship between the predictor and outcome variables can be strengthened or weekend. This, therefore, enhances the ability to better predict (Baron & Kenny, 1986). Hence the test of moderation in the current study helps to reduce to some extent the defects that come about as a result of the inability to draw a cause-effect relationship.

Also, the researchers largely employed the use of regression in testing the various hypotheses establishing the relationships between the variables. The researchers took this decision with the assumption that the relationships were linear. However, it will not be farfetched that a possible non-linear relationship could exist between the variables and therefore testing these relationships adopting non-linear regression models is likely to lead to different results.

Conclusion

In line with the findings, the study concludes that succession planning significantly predicts employee retention. Further, it provides empirical evidence for career development program as a moderator in the relationship between succession planning and employee retention, to the extent that it strengthens the relationship. Therefore, organisations may formally fuse career development programmes into its system and policies to increase the effect of succession planning on employee retention.

Implication of Findings

The findings of this study add on to the existing body of knowledge on the general subject of succession planning, employee retention and career development program in Ghana. Since there is inadequate literature on succession planning practice in Ghana, the findings of the study provide benchmark data that can be used for future research.

Furthermore, employees as it is well known, form the backbone for organisational growth and survival. For organisations to keep their scarce employees and even produce a pool of best talents, management needs to view succession planning as a strategic part of an organisation's policy to prepare employees for any future exit. This is more so as some employees see such strategic policies as a form of promotion in waiting. This if done will motivate and as well influence their decision to stay with their organisation.

Additionally, it has also become very important for organisations and their managers to attach greater importance to the career development of their employees. This study has revealed that career development of employees strengthens the relationship between succession planning and employee retention. One thing every employee wishes for in life is to have a career progression. This explains why so many workers today are pursuing higher learning and more difficult training programs to fulfill this wish. When employees find themselves in organisations that consider their career progression in terms of their career development, they will be willing to take advantage of such opportunities. More so when this opportunity is imbedded in the succession policy of the organisation. The need for a strategic innovation of career development programs to train and develop employees in organisations cannot be underestimated. Organisations that want to stay competitive, grow and survive in this turbulent business need to give the career development of their employees a favourable consideration. Consequently, if organisations embrace career development practices they would not only improve knowledge, skills and the abilities of their current and potential employees but also enhance the retention of quality employees.

Future Research Direction

The researchers suggest that a future study could incorporate the use of longitudinal design to improve the ability to make stronger causal statements than were found in this current study. Further, future research can exploit the use of non-linear regression models as well as different operationalization of the variables such as career development program, and also allow for the use of other analytical techniques to test the hypothesized relationships for this study.

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Editorial Policy and Information for Authors

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African Journal of Management Research seeks to publish works that test, advance and develop models, frameworks and concepts in the broad areas of management, organisation, finance, public sector management, marketing and decision systems. The Journal is international and multidisciplinary, which means that topics and themes appropriate for *African Journal of Management Research* will come from and cut across organisational/institutional sectors (public, private, non-for-profit) and address matters of theory, research and practice from a variety of management and organisational disciplines (finance, operations, human resource, organisational behaviour, marketing, services). The Journal's multidisciplinary character means it seeks to promote the interplay and nexus between organisational functionality, management practice and economic/national development. The Journal's aim is to facilitate greater understanding of organisational processes, managerial processes and functions and critical firm level challenges facing developing and emerging areas.

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- Practitioners' view point: Written by a practitioner or an academic, but with a clear practice slant
- Peer reviewed teaching case,
- Book Review

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The Journal's circulation is worldwide. It pursues a policy of double-blind peer-review. Papers are likely to vary in length from 5000-7500 words. Papers outside this range may only be considered under special circumstances.

Papers are invited from the general academic, research and practitioner community in Africa and around the world; the journal will occasionally issue calls for papers along particular thematic lines or request peer commentaries on topical issues.

Authors must submit electronic copies of their manuscript (in MS Word) to the Editor via email and online.

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- There must be an **Abstract** of up to **250 words.** Manuscripts must be prepared with MS Word and in **Times New Roman font size 12.** 1 inch margins must be maintained all round, fully justified and in **double line** spacing. The Abstract and References must be in single line spacing and font **size 10.**
- Title Page (title, author's name/s, institutional affiliation, full contact details - phone, fax, email and post) must be prepared separate from the body of the paper. Titles must be as concise as possible and not more than 15 words. Authors must avoid any reference to themselves no matter how tangential in the body of the text.
- Avoid the use of foot or end notes.
- Tables, Figures and Diagrams must be camera ready and sharp, set within the text; numbered, titled at the bottom without spacing from table, figure or diagram, all in font size 10. Voluminous descriptive data tables are not encouraged, except that they have direct bearing on the discourse and need to be referred to. Parsimony in use of tables and figures is preferred.
- All articles should include in the methodology, clear statement of where and when data were collected. The use of student populations where the matter at hand does not relate to student issues is not encouraged.
- Formulae must be presented using appropriate font and symbols, and set to centre, font size 10.
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- It is generally preferred that authors should ensure they articulate the nature of their paper's contribution to theory, method, policy or practice.

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- No paragraph numbering,
- Follow APA referencing style in the body of the text and in the reference listing.
- Examples of referencing in body of text:
  - In sentence: Aryeetey (2001);
  - End sentence: (Hinson, Domfeh and Ayee, 1999);
  - If a work has more than 2 authors, cite all in the first instance and use 'et al' subsequently;

Reference list should use the following style:

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AFRICAN JOURNAL OF
MANAGEMENT RESEARCH
Volume 27 Issue 1 October 2020

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