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Brief Philosophy of the Journal

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 email and online, in accordance with the 'Notes to Contributors'.

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Editorial

I am happy to welcome you to Volume 27 issue 2 of the *African Journal of Management Research*. Issue 2 follows quickly on the heels of Volume 27 issue 1 as I promised in my editorial of issue 1.

One more time, this issue consists of original research within the context of Africa, which, without doubt, differs from other continents. In this issue are papers based on research conducted in Kenya, Zimbabwe, Nigeria and Ghana.

The authors of *Establishing the relationship between work-family balance and work-family conflict: the role of organisational and individual factors*, analysed responses of respondents for insight into the impact of organizational and individual factors on the relationship between work-family balance and work-family conflict in Ghana.

In *Management of Obesity in Ghanaian Children: Voices of Health-workers and Parents*, authors interviewed doctors, nurses and parents to understand better the determinants of obesity among children in Ghana, which has been described by the World Bank as “a ticking time bomb” in Africa, and how this is managed.

The next paper is *Entry and sustenance strategies of dairy processing firms into supermarkets in Nairobi City County, Kenya*. Researchers identified supermarkets as powerful actors in the dairy product value chain in Kenya and sought to understand the entry and sustenance strategies used by dairy processing firms in gaining access to supermarket chains.

The role of top management support in the implementation of public sector supply chain management in the public sector in Harare, Zimbabwe, follows next. This study

investigated the role of the support of top management in the implementation of public sector supply chain management practices among public procuring entities in Zimbabwe.

Ghana Government’s policy framework for achieving sustainable energy as well as emerging opportunities and barriers relating to market development are analysed by investigating the solar energy market development in Accra in *Renewable Energy for Sustainable Development: An Assessment of Solar Energy Adoption among SMES in the City of Accra, Ghana*.

In *The Role of Supply Chain Control in Organizational Performance of Commercial Banks*, researchers investigated the link between changes in supply chain control and the performance of commercial banks in Nigeria.

The study, *Work-family conflict as antecedent to workplace deviance: a study among bankers*, assessed the relationship between work-family conflict (family-to-work and work-to-family conflicts) and workplace deviant behaviours (organizational and interpersonal deviance) among bank employees in Ghana.

In *Towards a Sustainable Corporate Social Responsibility Discharge and Accountability in the Extractives Industry*, the authors set out to answer two questions, i) how are CSR activities are manifested and discharged by mining companies in Ghana, and ii) what society’s expectations regarding the sustainable discharge of CSR been.

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

Establishing the relationship between work-family balance and work-family conflict: the role of organisational and individual factors

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Abstract

The study examined the impact of organizational and individual factors on the relationship between work-family balance and work-family conflict through a survey. Data from 250 respondents were analysed using the pearson product moment correlation, ANOVA and hierarchical multiple regression. Results showed that the interaction between marital status (individual factor) and working hours (organizational factor) did not impact work-family balance. Further, a significant negative relationship exists between work-family balance and work-family conflict, gender and age. Also, marital status and working hours were positively related to work-family balance. Marital status and working hours significantly moderate the relationship between work-family conflict and work-family balance. Although working hours moderate the relationship between work-family conflict and work-family balance, it did not account for a significant variance in work-family balance. Furthermore, educational level did not significantly relate to work-family balance. These findings imply that for organizational growth to be improved, stakeholders need to consider advancing work-family balance practices to cater for both employees' and organizational needs.

Keywords: Work-Life Balance; Work-Life Conflict; Organization Factors; Individual Factors; Employees

INTRODUCTION

In this epoch, where every activity one engages in exerts pressure on one's cognitive, emotional and physical domains and generally, life, the focus of every individual has moved towards attaining an appreciable level of balance to combat the daily stressors and also the synchronous changes in work and family life. A balanced life involves a person's ability to accomplish activities one engages in, in all domains of life (Kirchmeyer, 2000). Work occupies a great part of a person's life. Most often than not, a person's work activities obstruct his family life, creating an imbalance (Beham & Drobnič, 2010). This explains the concept of work-life balance which is an individual's "...perception that work and non-work activities are compatible and promote growth in accordance with an individual's current life priorities" (Kalliath & Brough, 2008, p.326). Work-family balance on the other hand, aligns itself with one aspect of work-life balance. Various researchers have tried to explain work-family balance. It refers to the "...extent individuals are equally involved and satisfied with work and family roles" (Kirchmeyer 2000; p. 513). Grzwacz & Calson (2007; p. 458) also expounded that it is an "accomplishment of role-related expectations that are negotiated and shared between an individual and his/her role-related partners in the work and family domains". Consequently, when one is actively and successfully involved in work and family roles, a balance is achieved (Rahman, Uddin and Abdul, 2017). An imbalance in these roles will lead to work-family conflict. Work-family imbalance therefore does not only impact job performance, family enrichment, employees' commitment, emotional consonance but also leads to job dissatisfaction, career dissatisfaction, absenteeism, turnover, and stress (Rahman et al., 2017).

There exist several antecedents to work-family balance: including organizational and individual factors. Organizational factors include flexible work arrangements (Hill, 2001), work support (Noor & Sahibzada, 2012), job stress (Bell, Rajendran & Theiler, 2012) and technology (Waller & Ragsdell, 2012). Emotional intelligence (Affandi

& Raza, 2013) and personality (Wayne, Musisca & Fleeson, 2004) have equally been identified as some individual factors that impact work-family balance. Keeton, Fenner and Johnson (2007) also found that demographic variables like marital status and gender significantly relate to work life balance. It can therefore be argued that demographic variables relate with work-family balance since it is an aspect of work and life.

Despite the plethora of literature on work-family balance, still issues like "...the factors behind work family balance and imbalance have not yet been fully investigated" (Rahman et al., 2017, p. 2). Aside this minimal research in this area, the few carried out failed to consider the effect of organizational and individual factors generally, and developing countries, thus creating a gap in literature. This study attempts to fill this knowledge gap using the person-environment fit theory in the Ghanaian educational context. This study is significant because context matters in research. Again, findings will help stakeholders know that although organizational and individual factors impact work-family life, the interaction between these factors have far worse consequences. For optimal employee wellbeing, organizational policies must consider work-family boundaries like work flexibility, as well as factor in employees needs especially family roles before handing out tasks to individuals. Also, findings will open another dimension of work-family life that has been least explored. The remaining part of the paper proceeds as follows, the literature and theoretical framework, methods, findings and discussion segments. Finally, the limitations and implications conclude.

LITERATURE REVIEW

Theoretical framework

The study is guided by the person-environment fit theory which focuses on the individual and the environment. The theory expands on the explanation of human behavior as a factor of the person and the environment together instead of regarding them as separate entities which is the focus of this paper, organizational environment.

The person-environment fit theory reflects how the interaction between an individual's values and needs and organizational needs impact behavior. Per the theory, to achieve an optimal outcome, there must be compatibility between individual and organizational needs. The primary need of the individual is to obtain a near perfect balance between work and family roles (Liu, Wang, Li & Zhou, 2019) and this need interacts with organizational need (Edwards, 2008), which can be argued to be achieving organizational growth and success. When these two needs support each other, there will be a balance (Valcour, 2007) and if otherwise, an imbalance. This theory has been successfully applied to both person-related and work-related variables (Edwards & Rothbard, 1999; Yang, Che, & Spector, 2008) independently, but not together, making this study unique. Consequently, this study attempts to merge them by applying both to identify how individual factors interact with organizational factors to influence work-family balance.

Work-family balance and work-family conflict

The current trends in literature pertaining to work-life balance issues indicate a movement towards a flexible and accommodative work environment that necessitates an incorporation of one's family life into one's work life with preferably, little or no conflict. Yet very little is known about work-family balance with the chunk of literature focusing on work-life balance (Doble & Supriya, 2010; Fapohunda, 2014; Hsu, Bai, Yang et al., 2019; Tausig & Fenwick, 2001). However, an understanding of the variables directing the path of work-life balance, will serve as an opener for variables that may influence work-family balance.

A considerable matter in work-family balance is work-family conflict. Several factors lead to work-family conflicts. Frone and Cooper (1992, p.726) list long and unsteady working hours, overtime working, autonomy status, the size of the organization, low wages, negative attitudes of management, work relations, promotion, expectations of the family, health status, number of children, age, income, and employee performance as reasons for work-family conflict. It stands to

reason that in order to create a balance, these variables need to be considered. It can be argued that the reverse of these practices represents work-family balance practices. This explains why an increase in work-family balance practices led to a significant decrease in work-family conflict (O'Driscoll, Poelmans, Spector, 2003; Thompson, Beauvais and Lyness, 1999). Regarding this, Byron (2005) and Gajendran and Harrison (2007) report a negative relationship between work-family balance practices (flexible working times) and work-family conflict indicating that an increase in work flexibility leads to a decrease in work-family conflict. Bell, Rajendran and Theiler (2012) found that among academics, there was an inverse relationship between job stress which represents work-family conflict practices and work family balance and well-being. Such that an increase in job stress is significantly associated with decreased work family balance and well-being. Chang, Zhou and Wang (2017) also reported that work stress had a positive relationship with work-family conflict; further these variables moderated the relationship between perceived work-family balance practices and work-family conflict. It is therefore suggested that an increase in work-family balance will have a negative relationship and effect on work-family conflict.

Work-family balance and individual and organizational factors

Conflicting results have been obtained in various studies investigating the relationship between individual and organizational factors like working hours, gender, age, educational level, marital status and work-family balance and work-life discussion. For instance, gender has been reported to be strongly related to work family balance (Doble & Supriya, 2010; Fapohunda, 2014; Keeton, Fenner, Johnson and Hayward, 2007). Keeton et al., (2007) revealed that gender mediated the relationship between work-family balance and employee's career satisfaction. Gender discrepancies in work-life balance (breaks from work, compressed working hours, self-roastering, tele-working, childcare, flexi-time, paid leave and job-sharing) have a positive significant relationship between the

eight independent variables and achievement of work-life balance for both men and women (Fapohunda, 2014). Similarly, both genders endorse flexible working hours, part-time work and working from home as factors that will improve work-life balance (Doble and Supriya, 2010). Fapohunda (2014) further reported that both genders admitted to having work life imbalance. These findings confirm a positive relationship between gender and work-life balance and therefore hypothesizes that there will be a positive relationship between gender and work-life balance.

Working hours and Work-family balance

Studies have shown that there exists a positive significant relationship between working hours and work-life balance (Hsu, Bai, Yang, 2019). However, Valcour (2007) reported a negative relationship between working hours and satisfaction with work-family balance. Working hours has equally been noted to mediate the relationship between work-family balance and employees' career satisfaction (Keeton et al., 2007). So aside working hours either increasing or decreasing work-family balance or work-life balance, working hours can equally influence the relationship between one's work-family balance and job values. The critical role working hours play in work-life balance discourse makes it a relevant organizational factor that needs to be attended to.

Age and Work-family balance

Research shows that there exists a positive relationship between age and work-family balance. Tausig and Fenwick (2001) in a research found a significant relationship between age and work-life balance. Specifically, the researchers submit that, between older employees and younger employees, the former enjoys greater success with work-life balance than the latter. A similar finding has been submitted by Priya (2017), with the older generation (50 years and above) having a better work-life balance than their counterparts ages 41 to 50 years. Also, Richert-Kaźmierska and Stankiewicz (2016) found that older age employees were more likely to indicate maintenance of work-life balance compared to younger age employees. It is therefore argued that older individuals will have a work-life balance than the younger aged generation.

Marital status and Work-family balance

Marital status has implications in work-life balance discussions. Darko-Asumadu, Sika-Bright and Osei-Tutu (2018) found that between married and unmarried couples, the latter group balanced their work and family roles better than the former. This finding suggests that there is a relationship between one's marital status and work-family balance. Other studies suggest that marital status has mitigating effect between work-family balance and activities that hinder work-family conflict. For instance, Keeton et al. (2007) found that marital status mediated the relationship between work-family balance and employees' career satisfaction. However, Priya (2017) reported that in investigating work-life balance among women teachers, there was no differences in marital status. Having these divergent results in different contexts, this study therefore attempts to find out in the Ghanaian context, the effect of marital status on work-family balance.

Educational level and Work-family balance

Although investigation on the relatedness of one's educational level to one's work-family balance and work-life balance has been least explored, the findings of a few studies suggests that educational level is positively related to work-life balance. For instance, Marič and Žnidaršič (2018) reported a significant difference in work-life balance experience of higher education lecturers based on academic ranks such that the higher one's academic rank, the higher one's work-life balance. However, the finding of Khairunneezam, Siti Suriani and Nurul Nadirah (2017) suggest that among academics, there were mixed responses in respects to the general feelings of satisfaction with the work-life balance. Also, among a subgroup of security personnel, clerks, universal relation officers, frontline officers right through to employees in middle level management, Darko-Asumadu et al. (2018) found a weak positive relationship between work-life balance and commitment since employees were unsatisfied with certain benefits (paternity leave, study leave, part-time work)

accrued to them. Although these studies were conducted in varying contexts and among different subgroups, they provide a preview to varying perspectives on work-life balance held by employees on different educational levels, as such interpretation from the findings of the various studies can be done with caution to ascertain if similar findings may prevail among subgroups in same context and category. Also, in a recent study, it was revealed that educational level is implicated in work-family conflict (Tunlid, 2018). Among mothers, educated mothers, compared to the less educated mothers, experienced higher work-family conflict than the latter (Tunlid, 2018). Since work-family conflict surfaces when there is an imbalance in work and family roles, the finding of Tunlid's study may imply that less educated mothers experience better work-family balance than much educated mothers. These different results call for investigation and this paper attempts to address this.

Based on the above discussions, the following are hypothesized:

- H1: There will be a significant relationship between individual factors (age, gender, marital status, educational level), organizational factor (working hours), work-family conflict and work-family balance.
- H2: Both marital status (individual factor) and working hours (organizational factor) will significantly impact on work-family balance
- H3: One's marital status will moderate the relationship between work-family balance and work-family conflict
- H4: Working hours will moderate the relationship between work-family balance and work-family conflict

METHODOLOGY

Sample, Sampling Method, Measures and Setting

To answer the research question which is "will organizational and individual factors influence the relationship between work-family conflict and

work-family balance" and achieve the objective, primary data was sourced using a self-designed questionnaire, while secondary information was gathered from journal articles and books. Three hundred (300) questionnaires were distributed to employees working in various sectors of the economy and 250 returned giving a return rate of 83.33 percent. Convenience sampling was used to select the study participants since it allows for the theoretical generalization of the findings (Sajadi, Mirzazadeh, Navadeh, Osooli, Khajehkazemi, Gouya & Haghdooost, 2013). The convenience sampling technique allows participants to be selected based on availability. Thus, participants who were readily available and willing to participate in the study were recruited for the study. Before the administration of the questionnaire, the objective of the study was explained, and respondents made to know the exercise was purely for an academic purpose. To increase the response rate, respondents' anonymity was assured, and the significance of the research explained again.

Instrumentation and Data Gathering

A questionnaire with both open and close ended questions was used to collect data. Eight research assistants were trained for data collection and data entry for four consecutive Mondays. They were also monitored weekly to ensure compliance and uniformity. The questionnaire was pre-tested using 30 respondents who did not form part of the sample for the study and feedback from the pretest was used to modify the final questionnaire.

Family-work conflict scale and the work-family conflict scale developed and validated by Netemeyer, Boles and McMurrian (1996) were used to gather data on Family- work conflict and work-life balance. The impact of Work- family Conflict scale was developed, followed by an open-ended question to gather information on other ways of work-family conflict. Respondents were given a month to respond to the questionnaire.

Data Analysis

Data was analysed using the Statistical Package for the Social Sciences (SPSS). Preliminary analysis was conducted to check for violations of assumptions of normality, linearity, homoscedasticity and homogeneity. It was realized that the assumption of homogeneity of data was violated so a more

stringent value was set for two-way analysis of variance. The relationship between individual factors (age, gender, marital status, educational level), organizational factor (working hours), work-family conflict and work-family balance was ascertained using the pearson product moment correlation. The impact of the individual factor (marital status) and organizational factor (working hours) on work-family balance was analysed using a two-way analysis of variance (ANOVA). To investigate if marital status and working hours will moderate the relationship between work-family conflict and work-family balance, hierarchical multiple regression was used.

RESULTS AND DISCUSSION

This first section presents the results of the demography of study participants aimed at situating the individual factors.

Table 1. Demographic Variables

Demographics	Frequency	Percentage
Gender		
Males	119	47.6
Females	131	52.4
Educational level		
Basic	90	36.0
Secondary/vocational	93	37.2
Tertiary	62	24.8
Others	5	2.0
Age		
18-30years	25	10.0
31-40years	146	58.4
41-50years	62	24.8
Above 50years	17	6.8
Marital status		
Single	27	10.8
Married	184	73.6
Cohabiting	19	7.6
Separated/Divorced	11	4.4
Widowed	9	3.6

Table 1 presents the demographic results of respondents. There were 119 males and 131 females. For educational level, 90 were (basic school) graduates 93 (secondary/vocational school graduates), 62 (tertiary graduates) and a minority 5 had no form of education. Most of the sample (146) were between the ages of 31-40 years, (17) were above 50 years, (25) between the ages of 18 to 30 years old, with (62) between 41 to 50 years. For marital status, most of the respondents (184) were married, with 27 respondents being single. Those cohabiting were 19 and 11 respondents were either separated or divorced and 9 widowed.

Table 2: Means, standard deviations and Pearson correlation and probability estimates for the study variables

	M	SD	1	2	3	4	5	6	7
Work-family balance	1.17	0.38	1						
Gender	1.52	0.50	-0.125* (0.048)	1					
Educational level	1.93	0.82	-0.100 (0.113)	-0.015 (0.811)	1				
Marital status	2.16	0.81	0.168** (0.008)	0.055 (0.391)	-0.144* (0.023)	1			
Age	2.28	0.73	-0.141* (0.026)	0.144* (0.023)	-0.105 (0.099)	0.076 (0.229)	1		
Working hours	1.87	0.66	0.131* (0.038)	-0.112 (0.078)	-0.156* (0.014)	-0.006 (0.930)	0.181** (0.004)	1	
Work-family conflict	9.46	2.20	-0.507** (0.000)	0.123 (0.053)	0.203** (0.001)	-0.121 (0.057)	0.077 (0.222)	-0.091 (0.151)	1

Note:

Significant levels (2-tailed) estimate in brackets

**. Pearson correlation is significant at the 0.01 level (2-tailed).

*. Pearson correlation is significant at the 0.05 level (2-tailed).

N = 250

The Pearson Product Moment Correlation was used to test hypothesis 1 and 2. Preliminary analysis was conducted to ensure no violation of the assumptions of normality, linearity and homoscedasticity. Analysis revealed a significant and negative correlation between work family balance and gender [$r = -.125$, $n = 250$, $p < .05$]. Also, there was a negative non-significant correlation between work family balance and one's educational level [$r = -.100$, $n = 250$, $p > .05$]. Marital status had a significant positive correlation with work-family balance [$r = .168$, $n = 250$, $p < .01$]. Age had a significant negative relationship with work-family balance [$r = -.141$, $n = 250$, $p < .05$]. Working hours had a significant positive relationship with work-family balance [$r = .131$, $n = 250$, $p < .05$]. Work-family conflict had a significant negative correlation with work-family balance [$r = -.507$, $n = 250$, $p < .001$].

Table 3: Summary of two-way analysis of variance of the impact of marital status and working hours on work-family balance

Variables	<i>df</i>	<i>MS</i>	<i>F</i>	<i>P</i>	Effect size
Marital status	4	0.185	1.327	0.261	0.022
Working hours	2	0.528	3.786	0.024	0.031
Marital status*Working hours	6	0.092	0.659	0.683	0.016

p < 0.05; **p < 0.01; *p < 0.001*

A two-way between groups analysis of variance was conducted to investigate the impact of marital status and working hours on work-family balance. A more stringent significance level of .01 was set to test for significance. Analysis revealed that there was no significant difference in the effect of working hours on work-family balance of marital status [$F_{(6, 250)} = 0.659, p = .016$]. In terms of main effects, there was no significant difference in marital status [$F_{(4, 250)} = 1.327, p = .261$] and working hours [$F_{(2, 250)} = 3.786, p = .024$] on work-family balance.

Table 4: Hierarchical multiple regression of the contribution of an individual factor (one's marital status) to the relationship between work-family conflict and work-family balance

Variables	Model 1	Model 2	Model 3
Constant			
Sex	-0.14* (.026)		
Age	-0.19** (.002)		
Level of education	-0.10 (.104)		
Working hours	0.13* (.034)		
Sex		-0.07 (0.182)	
Age		-0.13* (0.018)	
Level of education		-0.00 (0.962)	
Working hours		0.10 (0.066)	
Work-family conflict		-0.47*** (0.000)	
Sex			-0.08 (128)
Age			-0.14** (0.010)
Level of education			0.01 (.825)
Working hours			0.10 (.051)
Work-family conflict			-0.46*** (0.00)
Marital status			0.13* (0.018)

Note: Dependent variable: Work-family balance.
 $R^2 = .073, .284, .300$ and $\Delta R^2 = .073, .211, .016$ for steps 1, 2 & 3 respectively

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

After controlling for the effect of the demographics (sex, age, level of education) and the organizational factor (working hour), work-family conflict significantly predicted work-family balance independently ($\beta = -.477, t_{(250)} = -8.472, p = .000$) and explained 21.1% of variance in the dependent variable (.211 $\times 100$) [$F_{change(1,244)} = 71.774, p = .000$]. This was statistically significant. Marital status as the moderator variable explained 1.6% of variance in the dependent variable after being introduced

(.016 $\times 100$) [$F_{change(1,243)} = 5.680, p = .018$]. The interaction between work-family conflict and work-family balance was significantly moderated by one's marital status ($\beta = .131, t_{(250)} = 2.383, p = .018$). From the ANOVA table, this was statistically significant [$F_{(6,243)} = 17.372, p = .000$]. The overall model explained 30.0% of variance in the dependent variable (.300 $\times 100$).

Table 5: Hierarchical multiple regression of the contribution of an organizational factor (working hours) to the relationship between work-family conflict and work-family balance

Variables	Model 1	Model 2	Model 3
Constant			
Sex	-.16* (.009)		
Age	-.18* (.003)		
Level of education	-.09 (.119)		
Marital status	.17* (.004)		
Sex		-.09 (.095)	
Age		-.12* (.022)	
Level of education		-.00 (.974)	
Marital Status		.12* (.023)	
Work-family conflict		-.47***(.000)	
Sex			-.08 (.128)
Age			-.14** (.010)
Level of education			.01 (.825)
Marital status			.13* (.018)
Work-family conflict			-.46***(.000)
Working hours			.10 (.051)

Note: Dependent variable: Work-family balance. R²= .087, .289, .300 and ΔR^2 = .087, .203, .011 for steps 1, 2 & 3 respectively

*p < 0.05; **p < 0.01; ***p < 0.001

After controlling for the effect of the demographics (sex, age, level of education) and the individual factor (marital status), work-family conflict significantly predicted work-family balance independently (β = -.470, $t_{(250)}$ = -8.338, p = .000) and

explained 20.3% of variance in the dependent variable (.203 *100) [$F_{change(1,244)} = 69.517, p = .000$]. This was statistically significant. Working hours as the moderator variable explained 1.1% of variance in the dependent variable after being introduced (.011 *100) [$F_{change(1,243)} = 3.855, p = .051$]. This was not statistically significant, although the ANOVA table showed that the whole model was significant [$F_{(6,243)} = 17.372, p = .000$]. The overall model explained 30.0% of variance in the dependent variable (.300 * 100).

Discussion

Work-family balance is a critical issue for individuals who want to incorporate their career into their family roles. This is true most especially for career driven women (Fapohunda, 2014). This present study examined how the relationship between work-family balance and work-family conflict is affected by both individual and organizational factors. Analysis revealed that there was a negative significant relationship between work-family balance and work-family conflict, that is, an increase in work-family balance decreased work-family conflict significantly. Among the individual factors investigated, gender and age had a significant negative relationship with work-family balance, meaning an increase in one's gender roles and age significantly decreased one's work-family balance. Marital status was positively related to work-family balance, meaning an increase in one's marital roles positively and significantly increased one's work-family balance. There was no significant relationship between educational level and work-family balance, meaning an increase or decrease in one's educational level did not impact one's work-family balance. There was a positive significant relationship between the organizational factor (working hours) and work-family balance. Also, there was no significant difference in the interaction of marital status and working hours on work-family balance. Further, marital status and working hours moderated the relationship between work-family conflict and work-family balance.

Work-family imbalances breed conflict. Thus, the focus is to execute roles in the respective sector of life efficiently and successfully. This study reported that an increase in work-family balance decreases the occurrence of work-family conflict. This confirms what the person-environment theory posits, that there exists a reciprocal relationship between people and environments. Since the basic need of the individual is to obtain a near perfect balance between work and family roles (Liu, Wang, Li & Zhou, 2019), when there is a balance in the family activities and the needs of the work environment, it reduces conflict and consequently a positive impact on the employees' behaviour. Additionally, the finding is consistent with that of Bell et al. (2012), O'Driscoll et al. (2003) and Thompson et

al. (1999). Contrary findings have been submitted by Brough et al. (2005) and Hammer et al. (2005). Other researchers have also reported that work-family conflict was not significantly related to work-family balance (Kossek et al., 2006; Lapierre et al., 2006). The different subpopulation investigated could account for the disparity in these findings. These varying subpopulations ascribe to different work and family ethics and culture and therefore this may inform the responses given hence the difference. Thus, work and family ethics as well as culture has effect on the relationship between work-family balance and work-family conflict.

Further, in relation to the individual factors investigated, analysis revealed that gender was significantly negatively related to work-family balance. This contradicts the finding of Fapohunda (2014). However, Fapohunda (2014) finding advances that both genders experience work-life imbalance. Work-life balance considers all the various aspects of life while work-family balance streamlines the focus to a specific dimension. This could account for the differences in these findings. Flexible working hours, part-time work and working from home are factors that improve work-life balance (Doble & Supriya, 2010). This concept, although not completely new to the Ghanaian environment, is now catching on practically and this could greatly impact the gender stereotypes roles in the Ghanaian culture.

Findings from the present study showed that as one's age increases, one's work-family balance practices decrease. This refutes that finding of Priya (2017), Tausig and Fenwick (2001) and Richert-Kaźmierska and Stankiewicz (2016) which suggested that the older generation had a better work-family balance than the younger generation. This implies that the older generation encountered less work-family conflict. However, the finding of this present study suggests otherwise. This may be because majority of the sample (58.4%) were young, i.e, between age 31-40, thus, relatively not close to pension. Therefore, were much interested in career life and therefore had much grip on their career life and not reverting their energy into their family roles unlike the few (6.8%) who were above 50 years old and therefore may feel they have given

the best part of themselves to their career, as a result losing grip of their career. It can therefore be deduced and concluded that the older one becomes, the less interest one has with his career and therefore a reduction in work-family conflict.

Analysis also revealed that although an increase in one's educational level led to a decrease in one's work-family balance practices, this relationship was not significant. This finding is not supported by the finding of Marič and Žnidaršič (2018). The results revealed that an increase in one's academic rank significantly increased one's work-family balance practices. However, the finding of this present study may affirm the finding of Tunlid (2018) which suggested that less educated mothers experience better work-family balance than much educated mothers. This finding may also reflect the practices of the Ghanaian culture. In this culture, both genders are expected to assume some responsibilities regardless of one's level of education. Hence, one's level of education does not exempt one from executing certain assigned tasks. As such career-oriented individuals tend to juggle between work roles and family roles all in the hope of finding a near perfect balance without success.

Additionally, after finding a significant positive relationship between marital status and work-family balance, this study also found that marital status changed the relationship between work-family conflict and work-family balance into a positive one. This affirms the finding of Keeton et al. (2007) and further expands the role of marital status in work-family balance discussions as not just a mediator but also a moderator. Thus, one's marital status can explain the relationship between work-family conflicts and work-family as well as determine the proportionate experience of these two variables in relation to one's marital role. For instance, it has been reported that unmarried couples balanced their work and family roles better than married couples (Darko-Asumadu et al., 2018).

More so, studies on working hours, which is an organizational factor, and work-family balance or work-life balance has highlighted the multidirectional relationship between these two variables. This study found that an increase in working hours significantly increased work-family balance practices hence affirming the finding of

Hsu et al. (2019). Further, although working hours moderated the relationship between work-family conflict and work-family balance, working hours did not significantly account for a unique variance in work-family balance. This may reflect the finding of Keeton et al. (2007) that working hours may be better captured as a mediator. Also, this finding reveals that working hours may interact with other variables to moderate the relationship between work-family conflict and work-family balance. And so organizational factors alone may not impact work-family balance, however, other variance in addition to organizational variables may significantly influence the relationship between work-family conflict and work-family balance.

Finally, it was realized that marital status did not interact with working hours to impact work-family balance. However, previous finding in this present study that working hours moderated the relationship between work-family conflict and work-family balance, suggested that working hours may interact with other variables to either mediate or moderate the relationship between work-family conflict and work-family balance. Hence, although an interaction between individual factor and organizational factor did not impact work-family balance as the person-environment fit theory postulates, prior finding in this present study equally reveals that organizational factor alone cannot impact work-family balance. This implies that although working hours may not have interacted with marital status, further studies may explore other variables to unveil how organizational factors may interact with other individual factors aside marital status to impact work-family balance. Therefore, this finding partially supports the tenets of the person-environment fit theory emphasizing its relevance and applicability to the Ghanaian context.

Limitation

No study is without flaws, so it is with this current study. A major limitation identified was that the sample was not homogeneous. Hence, in order to make statistical interpretation, a much stringent level of significance was used.

CONTRIBUTION, IMPLICATION AND CONCLUSION

The changing trends in work and family roles make the issue of work-family balance a major priority for the individual who is confronted with the competing unique roles. This study has enhanced the understanding of work-family balance, as well as brought out factors that impacts work-family balance in a developing country. This impact study has also captured how person-organization fit theory relates to work-family balance in a developing context. Aside from the present study revealing that both individual and organizational factors can independently impact the relationship between work-family conflict and work-family balance, it has further provided a direction for further investigation for researchers in developing countries. These findings imply that to do away with negative organizational behaviors and improve organizational commitment, stakeholders should formulate policies to incorporate benefits like work flexibility which includes maximum working hours, telecommuting, compulsory leave to cater for family roles to ensure congenial employment relations. Also, uniformity in organizational policies may not be ideal in obtaining a balance between work and family roles, thus stakeholders may need to consider personalizing certain policies to facilitate a balance between work and family roles. Finally, married individuals must put measures in place to fuse the dissimilar part or roles they are to assume in order to minimize work-family conflict. For optimal wellbeing of the employees, organizations must critically consider what works best for the employee and fit it into the organizational environment, like policies and practices to enhance organizational growth.

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Management of Obesity in Ghanaian Children: Voices of Health-workers and Parents

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Abstract

Obesity has been described by the World Bank as a “ticking time bomb” which has significant potential devastating economic and health effects, for the poor, and low-and-middle-income country dwellers. However, obesity is thought of as a challenge only among the rich, urban, and high-income country inhabitants. This study was conducted in Ghana to gain in-depth understanding of the determinants and management of obesity in children among health-workers and parents. A qualitative case-study in design, data were collected with an in-depth interview guide from five doctors, seven nurses and eighteen parents purposively selected from the paediatric department of the 37 Military Hospital. Recorded interviews were transcribed, coded manually, and analyzed using the principles of Grounded Theory. Obesity in children is on the ascendancy with inadequate management. Determinants are both familial and environmental with detrimental health and psychological consequences. Some healthcare providers need to be trained in the assessment, diagnosis, proper interpretation, and management of the condition. There is also the need for mass education of the public especially parents, by relevant stakeholders to reduce the incidence of obesity in children and its attendant problems in Ghana.

Keywords: Ghana; Health-workers;
Management; Obesity in children; Parents

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INTRODUCTION

Obesity in children has been recognized as a significant national and international government health crisis (Wang & Lobstein 2006). A child is regarded to be influenced by obesity, if his or her body mass index-for-age (or BMI-for-age) percentile is equivalent to or higher than 95% (Kelishadi, 2007; Ogden *et al.*, 2014). BMI-for-age percentiles have been created as the preferred technique for measuring weight status in children. This technique calculates the age and BMI-based weight category of the child, which is a weight and height calculation. BMI is also plotted on the CDC growth chart for children between 2 and 19 years of age to check for the corresponding percentile related to age and sex (Ribeiro, *et al.*, 2010).

Obesity in children is triggered by the imbalance between calorie consumption and calorie use (De Onis, & Lobstein, 2010), implying that, when intake of food exceeds expenditure consistently over some period of time, there is the incidence of obesity. The incidence of obesity in children tends to have adverse effects such as premature mortality as well as adult physical morbidity and is usually linked to impaired childhood health (De Onis, & Lobstein, 2010). Furthermore, obesity in adolescence can lead to several health risks, including type 2 diabetes mellitus, early metabolic syndrome, dyslipidaemia, coronary artery disease, and obesity in adulthood (De Onis, & Lobstein, 2010; Ribeiro, *et al.*, 2010).

Though there have been claims that complications of obesity in children do not become apparent for years, the metabolic effects of obesity may already be apparent in young children. The child with obesity may develop gallstones, hepatitis and sleep apnoea before adulthood, and other social effects like teasing, discrimination, victimization and clustering of cardiac risk variables as well as psychological issues such as anxiety and depression, low self-esteem, and low self-reported quality of life (Peltzer, & Pengpid, 2011; Reilly, 2007). They are also likely to experience chronic disease-affected health, contributing to increased private and health care expenses (Chaput, *et al.*, 2011). Children who are affected tend to experience negative outcomes in adulthood such as limited productivity and excessive medical costs both at home and the

workplace. A good course of weight in children is therefore necessary, and this is where height and weight change are proportionate as children grow (WHO, 2015).

Childhood-related obesity is a growing problem for the health and well-being of the child (Reilly, 2007). Genetic, behavioural, and environmental factors are the elevators of obesity in children. These factors include altered nutritional habits, sedentary lifestyles, enhanced access to low-cost high-fat, high-energy products, and a simultaneous decrease in physical activity (Reilly, 2007). In certain instances, the appetite of children may tend to increase through certain medical circumstances, such as hormone disorders or low thyroid function, and some medications, including steroids or anti-seizure medications which may result in weight gain. Many a time, obesity in children (and obesity in general) is regarded as an issue for high-income countries, yet low- and middle-income nations are also facing this challenge, and Ghana is no exception. For this reason, the world bank has described obesity in low-and-middle-income countries as a “ticking time bomb” with significant potential devastating economic and health effects on these countries (World Bank Report, 2020).

Global statistics indicate that in about 5 decades beginning the 1970s, prevalence of obesity has nearly tripled. In 2016, about 1.9 billion adults aged 18 years and above were classified as overweight, from which 650 million were obese. More than 340 million children and adolescents between the ages of 5 and 19 years were overweight or obese, and 41 million children younger than age 5 years were also overweight or obese (WHO, 2018), 25% of these children representing 10.25 million were found in Africa (WHO, 2018).

A systematic review of overweight and obesity in Ghana in 2016 revealed consistent elevations in the prevalence of overweight and obesity for 18 consecutive years (1998-2016). This review indicated that almost 43% of sampled adult Ghanaians across all regions were either overweight or obese. The national prevalence of these variables were estimated as 25.4% and 17.1% respectively, with higher figures among urban dwellers than rural dwellers (27.2% against 16.7% for overweight) and 20.6% against 8.0% for obesity). Regional analysis

labelled 55.2% of residents of the Greater Accra Region as overweight or obese alongside the level of urbanization (Ofori-Asenso, Agyeman, Laar, & Boateng, 2016). With regard to overweight and obesity in children, a study in urban Ghana among school children aged 5-16 years has also indicated that about 47% of these children were overweight, and 21.2% were obese with higher prevalence of obesity in children in private school (26.8%) than in public school (21.4%) (Ganle, Boakye & Baatiema, 2019). Other empirical evidence in Ghana shows that almost 19% of Ghanaian children are either obese or overweight, and this represents a public health challenge. More females are found to be overweight or obese than males (Ofori-Asenso, Agyeman, Laar, & Boateng, 2016; Ganle, Boakye & Baatiema, 2019; Akowuah & Kobiah-Acquah, 2020)

In other studies, obesity determinants have been found to be complicated and diverse, hence it is not feasible to focus on a single course of action to prevent obesity in children (Chaput, *et al.*, 2011). In the same vein, childhood interventions to avoid overweight and obesity in low- and middle-income countries have been effectively introduced through several pilots, however, obesity in children remains a threat (Crothers, *et al.*, 2009). There are some existing preventive measures both by health facilities and the government of Ghana such as health portion education on the causes of obesity and healthy eating, but these are inadequate to effectively control or manage obesity in children.

In addition to contributing to the literature on obesity in children in Ghana and low-and-middle income countries in general, this study is deemed timely and important because previous studies in the country have concentrated only on parents with children suffering from obesity with quantitative methods (Lindsay, *et al.*, 2006), this study included health workers and some Ghanaian parents regardless of their children's weight status, and was conducted to unravel in-depth information on the determinants and management of obesity in children from their perspectives and from a qualitative study angle to better inform obesity prevention and management programmes in Ghana. Health workers were included in the study to ascertain the factors that influence obesity in

children and what the health system has put in place to manage the problem. Also, parents with and without obese children seeking care for their ill children in the study facility were sampled because they were all parents and had a common goal of seeking the treatment for some health problem(s) for their children and were accessible in the study facility.

METHODOLOGY

Study Area, Design, and Sampling

The research was a case study conducted at the 37 Military Hospital in Accra. The 37 Military Hospital was selected purposively for its known status as the second largest hospital in Ghana and its role as the National Health Facility for Disaster and Emergency Response. The hospital is a specialist military-based hospital located in the South-Eastern part of the Greater Accra Region of Ghana. It is located some few metres from the Jubilee House which is the seat of Government in Ghana. It is supported by many Medical Reception stations in the various military garrisons across the country. The hospital caters for both military personnel and civilians throughout Ghana. It has a mix of staff, both military and civilians, thus, provides health care to soldiers, their dependents and over the years incorporated the provision of health services to the public. The hospital has a staff strength of about 3,500 with an estimated outpatient attendance of 30,200 and 13,209 inpatients yearly. Additionally, the hospital has been touted as one of the best hospitals in the country, where patients can access many different specialized services at a time, thus, serving as an abode for patients with diverse medical conditions. Access to eligible participants was therefore easier.

The study population were healthcare workers and parents attending hospital with their ill children. To ensure inclusion of eligible participants, and to ascertain their willingness to participate in the study, all participants were contacted before data collection began. Purposive sampling was thus, employed to select 5 doctors out of a total of 7, and 7 nurses out of a total of 20, all at the paediatric unit of the hospital who were willing to be part of the

study. Convenience sampling was used to recruit 18 parents visiting the hospital at different times into the study. Out of the 18 parents, 3 of them, had children who were affected by obesity, and the others had children living with other medical conditions and frequented the hospital. A total of 30 participants were thus, involved in the study. The sample size for each category of participants was determined during the interviews, when data saturation was realized, and interviews were discontinued ((Langdridge, 2007).

Study Instruments and Data

The qualitative data consisted of responses from interviews. An interview guide was developed in tandem with the research questions to gather general and specialist views and information on risk factors, preventive approaches and measures that had been proven effective in dealing with obesity in children from doctors, nurses and parents. The interview guide was pre-tested in a clinic in the Adentan District of the Greater Accra Region. This was to ensure that the questions were clear without traces of ambiguity and elicited clear and appropriate responses. All participants were invited to take part in face-to-face in-depth interviews. To ensure collection of high-quality data, all the interviews were conducted in English as all the participants could clearly express themselves in the English language and thus, preferred it as the medium of communication for the interviews. Also, the interviews were facilitated by the second and third authors who hold master's degrees from the University of Ghana and have the requisite training, skill and experience in qualitative research data collection.

For all the participants, core topics were the same, but probes were added so that the specialists which in this case were the doctors could give a medical opinion on some of the issues regarding obesity in children. Prompts and probes were used throughout the interviews to ensure adequate stimulation of the discussions.

Ethical Considerations

Ethical approval was granted by the Ethics Committee of Humanities (ECH), University of Ghana, as well as the 37 Military hospital with the study protocol before the commencement of the

study. Each participant was informed about the purpose of the study, the voluntary nature of their participation and their ability to terminate the interview at any stage without any negative consequence before their engagement in the study. Their signed written informed consent which additionally contained permission to publish findings of study with anonymous quotes from participants was also obtained.

Data Processing and Analysis

The interviews were digitally recorded, and field notes were taken as well. The transcripts and the original recordings were reviewed several times. The audio recorded interviews and notes taken were transcribed verbatim in a word processing application. The data were analyzed using the principles of Grounded Theory as a guide by the first and second authors independently. They then came together to compare notes and built consensus. Manual coding labels were assigned to the main themes that emerged from the data on determinants and management of obesity in children. Quotes were then selected to represent the themes and slightly modified to enhance readability. The letters 'D', 'N' and 'P' were used to denote quotes from Doctors, Nurses and Parents respectively.

FINDINGS

The findings of the study are presented under the main themes of: Socio-demographic characteristics of respondents; What is obesity in children? determinants of obesity in children; effects of obesity in children; and prevention and management of obesity in children as follows:

Socio-demographic characteristics of respondents

As shown in Table 1, 73.3% (22/30) of respondents were females and the remaining 26.7% (8/30) were males. The majority of respondents (60%; 18/30) were between the ages of 25 and 45 years whilst 40% (12/30) were 46 years and older. Sixteen out of 30 (53.3%) were married, 12 (40%) had never married before and the rest, 6.7% (2/30) had no spouses because they were divorced. Whilst

only 8.3% (1/12) of health-worker respondents had been employed for 1-12 months in the health

facility, the majority (41.7%; 5/12) had worked in the health sector for more than 10 years.

Table 1: Socio-Demographic Characteristics of Respondents

Attribute	Number of Respondents	Percent
<i>Age (Years)</i>		
25-34	14	46.7
35-45	4	13.3
46+	12	40
<i>Sex</i>		
Male	8	26.7
Female	22	73.3
<i>Marital Status</i>		
Married	16	53.3
Never married before	12	40
Divorced	2	6.7
<i>Number of years worked in the facility (Health-workers)</i>		
1 – 2	1	8.3
3 – 5	3	25
6 +	8	66.7

N = 30; n (health-worker) = 12

What is obesity in Children?

The doctors and nurses were generally knowledgeable on what obesity is. They defined it as a condition in which a child has excess body fat, or a child is equal or above the 95th percentile of the Body-Mass-Index for age.

Obesity in children is a medical condition that affects children and adolescents making their body to store too much fat above the normal weight for their age and height. A child is affected by obesity when his or her BMI is above the 95th percentile.... [D1]

A child is said to be affected by obesity when he/she has excess body fat.... “[N1]

When the weight for height of children is above normal for their age, we usually say the child has been affected by obesity [D2]

The parents also understood what it meant to say that a child is affected by obesity. Obesity to them

is the excessive weight gain in children usually coupled with health problems.

Obesity is when a child is fat and his/her weight exceeds the normal weight for a child when you compare him or her to their age mates [P1]

It's obvious to identify a child who is affected by obesity because that child looks fat or fleshy than his friends and age mates [P3]

Factors Influencing Obesity in Children

Genetic characteristics

The role of genetics is a very common cause of obesity mentioned by all the health worker participants. Some of them stressed that, genetic make-up is the main predictor of a child's weight. Some of the participants indicated that certain medical conditions can also lead to babies being born overweight, thus,

Usually, babies are born with excess body fat or weight when their parents, especially the mother is overweight, and also when the mother has certain health conditions like diabetes (D4)

A child is affected by obesity when family factors usually overshadow other physical or environmental causes, for this, control is quite difficult (N6)

Some parents also believed that obesity among children was associated with genetic factors. According to one parent:

Sometimes you feed your children the same amount of food and engage them in similar activities yet one is affected by obesity, taking after a fat person in the family (P5).

However, some of the parent participants indicated that some parents are to be blamed for their children becoming affected by obesity.

Some of us parents allow our children to eat the food they're not supposed to be eating and these children tend to gain weight excessively, but we interpret it as having genetic origin because some family members are overweight.(P6)

Environmental and Behavioral factors

The healthcare workers believed that Ghanaian diet is a major cause of excess weight among the children. They stated that many of the foods are high in fatty oils, starch, and carbohydrate and lack enough protein and minerals. They also mentioned lack of exercise and physical activities for children as well as social and psychological factors being causes or determinants of obesity in children in Ghana.

Ghanaian foods are mainly starchy foods like cassava, flour, maize, yam and cocoyam, and these form the bulk of our daily meals. Thus, we feed our children with these foods that are high in energy and the expend little energy by way of exercising. [D5]

We have been socialized to consume what is available and cheaper, however, these tend to make us grow fat. Ghanaian foods like fufu and banku are all loaded with high calories, our children eat large portions of these almost every day and some end up being affected by obesity. [D3]

For me, when my child does not add bread to his breakfast, I feel he would go hungry soon, so I always insist on he eating a huge portion, but I have now realised that it's too much and not good for him because of the frequency and size P13]

Diet, lack of exercise, psychological conditions such as looking thin meaning poverty and being fat connoting good living are some of the factors associated with obesity in children [N3]

Here in Ghana, people look at your fat child and say, she is looking nice and that it is a sign of good living, and this motivates you to overfeed the child [P10].

Effects of Obesity in Children

The healthcare workers identified health effects of obesity in children to include serious medical conditions such as cardiovascular diseases, sleep apnea and diabetes.

We have seen many children who come here and are suffering from heart diseases and high blood pressure due to their weight. Diabetes is also very common among such children [D2]

When a child finds himself suffering from obesity, there is the likelihood of having difficulty in sleeping well, blocked arteries and a lot of painful conditions [D3]

A child who has obesity is very likely to suffer from heart related diseases even as a child, he or she may later develop more complications in adulthood if not much is done about it, and ultimately meet his/her death [D5]

Though parents had a fair idea of the health effects that obesity had on children, the social and psychological effects such as low self-esteem and

ridiculing were what they were mostly concerned about. Parents with children who are affected by obesity indicated that in such situations they are also affected psychologically and emotionally.

Sometimes children who are fat are teased by their friends at school and so they refuse to go to school on some days, this affects their schoolwork and therefore their future [P17]

People tend to frown at abnormal looks, especially when a child is too big for his/her age, this child is stared at by people wherever they find themselves in the public. This may create psychological effects such as low self-esteem for the child and the child may withdraw from social activities [P10]

There was a party being organized for children in my neighborhood, and my child went there. He later came back home crying that they were telling him not to come and finish the food because he was fat, I became very disturbed as a parent. [P2]

Prevention and Management of Obesity in Children

Healthcare worker participants enumerated health promotion activities such as education on causes and effects of obesity in children among the general public, healthy eating for all and adequate physical activity and exercises as the main preventive activities that can curb or control obesity in children. They however, indicated that the manner in which some of these activities are carried out makes it ineffective in controlling the prevalence of obesity in children.

Some health education is given to mothers if they come for weighing. Measures are not effective, and this is because they lack knowledge about the effects of obesity in children [N2]

We educate mothers on child feeding but I don't think it's really effective because we say it in passing when they come for weighing and we don't really monitor. Also, during the first few visits after

children are born, we look for weight gain in children and encourage parents to feed their children well. When this is carried into the future without caution, then the problem of obesity sets in [N1]

With regard to the management of obesity in children in the facility, healthcare worker participants stated that they prescribe healthy eating, encourage increase in physical activity, and prescribe appropriate medications when the children have accompanied morbidities, and provide them with counselling services as well.

I usually refer my patients especially parents with children who are malnourished to our in-house dieticians to advise them on how to manage their diet. We also have health workers counsel parents. [D3]

The doctors and nurses also established that some of the recommended approaches in dealing with obesity in children should include the provision of the necessary information through mass education on the right nutrition for children. They also suggested that parents should seek professional help to identify effective ways of dealing with the factors that can easily lead to obesity in children.

More sensitization of the general public about obesity in children being a serious condition would help in the prevention of obesity in children. More education to be given at child welfare clinics about the condition as well [D1]

Metropolitan, District and Municipal Assemblies ensuring that there is the provision of play-grounds or recreational areas in various communities in the country would help. These can serve as a means of exercising the body and expending more calories [D3]

There should be public health education on risk factors associated with obesity. Local government should support gym services to make it cheaper so as to encourage patronage. Keep fit sessions should be encouraged regularly in various communities to cultivate a pattern of

physical exercise in citizens and their children and physical education should be incorporated in various schools' curriculum [D4]

For parents with children suffering from obesity, they need to draw up health food menus and they must strictly comply with them, there should be less cholesterol food, they should eat foods with more fibre, fruits and vegetables. Parents should help their children to exercise and also adhere to their diet plan [D5]

Parents with children who are affected by obesity particularly stated that they try to control the intake of the children, as a way of managing their condition, but do not have much control over foods advertised and sold to the children outside the home, especially when they are in school. Some parents also did not feel well equipped to distinguish between healthy and non-healthy foods considering great exposure and availability of the various foods that they have been socialized with.

I try to discourage eating of snacks while in school as a way of controlling my son's weight, but because I'm there not with him, I can't enforce that [P3]

Hmmm, at times, it's very difficult to select from the many high calorie foods that we're used to, and that makes it difficult to control the weight of the children [P10]

Parents also reported on the need for strategies to encourage their children to eat healthy foods as unhealthy food tasted good and irresistible to the children. Parents also recognized that the absence of playgrounds in schools and communities led to children's low physical activity levels. They therefore pleaded that schools should incorporate more physical activities in the school curriculum to assist children to become more physically active as it is difficult for them to oversee to physical activities of the children in the home. They also expressed the need for parents to allow their children to engage in vigorous activities outdoor even when they get dirty because it is healthy.

My child has been suffering from obesity because of how I was feeding him, but

now I have changed his diet plan to help him reduce weight [P3]

Schools concentrate more on studying instead of physical education and physical activity. These must be incorporated into the schools' curriculum to assist with increased physical activity. [12]

I used to punish my children when they go out to play because they get themselves dirty, but now I allow them to engage in playing outdoor games like football and run around so they'll be healthy. [P15]

I think as parents, we should be well informed on all issues related to obesity in children. We need to encourage our children to exercise regularly and their diet has to be changed for healthier options [P7]

Discussion

The impact of modern lifestyle behavior patterns in low-and-middle income countries has contributed significantly to the physical and dietary changes in recent years, resulting in the rise of the prevalence of obesity in children in these countries in the quiet (World Bank Report, 2020). The in depth understanding of the perspectives of both healthcare professionals and parents on obesity in children provides a useful framework for evaluating the complicated and intricate issues facing obesity among children in Ghana where attention on the issue is quite low just like any other low-and-middle income country.

Healthcare workers' perspectives on the risk factors and causes of obesity in children as found in this study concur with previous studies that described obesity to be excess body fat as a result of eating more calories than what the body expend (Reilly, 2007; WHO, 2015). As found in the study, the causes of obesity in children are diverse. They include unhealthy eating resulting from the availability of high-calorie local foods that are virtually the foods that the Ghanaian tongue is cultured to prefer. Additionally, cultural thinking of the optimal body size and perception of beauty has contributed to the growth of obesity in children as some of the findings of the study have revealed.

Ghanaians as a group of people were not very conscious of physical exercising as a way of preventing obesity in children as most children previously used to walk long distances to and from school. However, urbanization and modernization accompanied with improved economic conditions have influenced some changes to this situation. Children now find themselves going to school in vehicles and eating whatever they find palatable, especially in the urban areas.

The findings have indicated that knowledge on the causes, effects and prevention and management of obesity in children among healthcare workers is high and appreciable among parents, however, the general public needs to be more informed as these seem to be an 'emerging' public health issue in the country.

Existing evidence demonstrates that effective early childhood interventions specifically changes in the nutrition of a child by parents and other lifestyle changes can balance out the risk and protective factors, therefore, early intervention for obesity in children is important. The introduction of healthy methods such as plant-based foods and fruits consumption and the inclusion of exercises and active lifestyle have been identified as the cornerstones of obesity in children prevention programmes (Barlow, *et al.*, 2002). However from the study, it was realised that the scope of educational services and the environment in which children find themselves did not provide the opportunity to be engaged in lifestyle changes such as conscious healthy eating, physical activities in schools and homes and general obesity prevention efforts. Therefore, there is the call for schools and the government to provide recreational environment, as a base for obesity intervention strategies by healthcare professionals and parents.

The finding pertaining parents believing that healthcare professionals could provide the necessary directions on healthy lifestyle changes, provides a unique opportunity for healthcare workers to point parents and other institutions in the right direction to expose children to healthy behaviour. This is particularly relevant for children who may have the risk factors for obesity. For example, many parents in this study believed that whatever the children enjoyed irrespective of the

caloric content was acceptable since they looked well-fed and catered for, and thus, acceptable by society. Measures could be put in place to ensure that parents are taught how to plan healthy meals at home for their children, and caterers in schools also taught how to provide portion-controlled and balanced meals for children in schools. Further measures in schools could include providing playgrounds and gadgets for physical exercises through Parent-Teacher Associations. This suggestion is in relation to studies that have shown the importance of involving parents in school activities in measures necessary for child wellbeing (Phillips & Shonkoff, 2000).

The successful interventions for the prevention and management of obesity in children have involved important people in the lives of children. These include parents, community members and teachers (Ofori-Asenso *et al.*, 2016; Ng *et al.*, 2014; Shepherd *et al.*, 2002). Clearly apparent in this study is the need for healthcare professionals and other relevant stakeholders to engage parents in health education, behaviour change methods and access to physical activity opportunities by regulatory bodies to assist children gain control over the maintenance of healthy body weight.

A limitation of this study is the sampling of parent participants from a hospital setting, however, the fact that all these parents had one thing in common-the welfare of their ill children, assured genuine responses and opinions on the matter under discussion.

CONCLUSION

Obesity in children is quite silent in Ghana as the public does not show much concern about it. It is however, important that the general public especially parents are educated to understand the risks of obesity in children, and the need to put adequate preventive and effective management systems in place to tackle it before it becomes an uncontrollable menace. Parents and health workers appear eager and open to strategies and behavioural changes that would be beneficial to overcome and manage risk factors of obesity in children. The mention of institutions especially educational ones is one important aspect that is essential to develop

practical measures in terms of physical education to prevent obesity in children. It is thus, evident that all-encompassing measures need to be established across a variety of settings to ensure that health related messages on obesity in children are relayed to parents and the Ghanaian community.

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Entry and sustenance strategies of dairy processing firms into supermarkets in Nairobi City County, Kenya

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Abstract

The growth of dairy processing firms is highly dependent on doing business with supermarkets as supermarkets are powerful actors in the dairy product value chain. This paper therefore, examines the entry and sustenance strategies used by dairy processing firms into supermarkets in Nairobi, Kenya. By way of methodology, this is a case study that conducted two rounds of sampling on a population of eleven dairy processing firms. The first round was a census to verify existence and sizes of predetermined dairy processing firms. In the second round, stratified random sampling technique was conducted to create three categories and thereafter, select dairy processing firms for inclusion in the sampling frame. Data was analyzed through thematic analysis. Findings indicate that New Product Development, distribution chains, diversification, packaging, Mergers and Acquisitions, food safety strategies, market and marketing, and products serve as important entry strategies into the supermarket chains. Organizational structure and slotting allowance were crucial sustenance strategies. Dairy processing firms experience challenges such as safety and health standards, dairy product imports, export markets, trade credit, product promotion, legal certification, supermarket private standards, supermarket own labels and market challenges. Small, medium and large dairy processing firms apply different entry and sustenance strategies and experience different challenges while doing business with supermarkets. This paper, to the best of my knowledge, is the first to explore the different entry and sustenance strategies utilised by small, medium and large dairy processing firms for purposes of gaining access and sustaining their products into supermarkets in Nairobi, Kenya.

Keywords: Entry strategies; Sustenance strategies; Dairy processing firm; Supermarket; Value Chain

INTRODUCTION

Kenya has a robust dairy processing sector estimated at 4% of the country's Gross Domestic Product (GDP) (Rademaker, et al., 2016). The sector has recorded an increase in dairy produce especially milk which is delivered to dairy processing firms for processing. This increase from 419.3 million litres in 2014 to 437.5 million litres in 2015 has translated into a burgeoning of the volume of dairy products such as milk, cream, butter and ghee. The production of yoghurt and fermented milks has also recorded a significant increase of 24.5% between 2014 and 2015 (Kenya National Bureau of Statistics, 2016).

The sector has a complex value chain with diverse actors that include farmers, traders and vendors, collection centers, distributors, processors, and retailers. There is also a proliferation of inputs, products and services (Rademaker, et al., 2016). Dairy processing firms as actors in the sector include few large processing firms and a high number of small and medium dairy processing firms. An estimated 40 dairies are significantly active in production and availing their products to the market through the normal retail channels (Muriuki, 2011).

The National MSE Baseline Survey (1999) categorizes firms into small, medium and large with small firms having less than 49 employees, medium firms having between 50 and 99 employees while large firms have more than 100 employees. The large dairy processing firms concentrate on ambient temperature long shelf life products; medium and small scale processors process high value products such as flavored milk, yoghurt, cultured milk, cream, ghee and butter. A big number of the small specialist dairies produce some products either exclusively or together with few others. Such products include yoghurt, cheese and ice cream (Food Business Africa, 2013). Current trends in Kenya show that the production, marketing and demand for dairy products continues to grow especially for dairy products such as Ultra High Temperature (UHT), milk powder, yoghurt, cheese, butter, ghee and cultured milk which are experiencing growing demand especially in urban areas and regional markets. Further to this, there is increase in dairy processing

firms, dairy investment capacity expansion and technology (Kenya Dairy Board, 2016).

Dairy processing firms depend on the retail market (wholesalers, shops, supermarkets) to sell their products down the value chain. The processors have noted that dairy products continue to gain popularity especially in urban areas due to increased incomes, changing eating behaviors, convenience, and emergence of new actors in the value chain. These new actors include supermarkets which are currently preferred by dairy processing firms as supermarket chains offer high opportunities among other major benefits. The supermarket chains do not only offer self-service but also a touch and feel notion to Kenyan consumers. They have successfully dislodged small scale shops (duka) as the main targets for consumers (Ouma et al., 2013).

Supermarkets have gone beyond the initial middle-class clientele and penetrated the food markets of lower class citizens making them popular ventures. However, the relationship between supermarkets and processors is complicated as supermarkets are very demanding clients. They have high level requirements such as the need for higher and more consistent quality, consistent year round delivery, large volumes of goods, and stringent payment terms. But these requirements do not deter processors and if successfully met, the dairy processing firms look forward to great growth opportunities (Neven and Reardon, 2004).

THEORY

This study applied the Competitive advantage theory which comprehensively covers the internal and external dynamics to a firm. The main proponent, Michael Porter (1990), argues there are five competitive forces that define the rules of competition in an industry. They include potential entrants, buyers, industry competitors, substitutes and suppliers. The goals of competitive strategy for any firm within an industry, is for purposes of positioning itself where it can best defend its interests against competitive forces or influence these forces in its favor. A firm's critical strengths and/or weaknesses are highlighted by the knowledge of its sources of competitive pressure. The firm animates its positioning in the industry,

clarifies areas where strategic changes yield the best outcomes and also highlights areas where industry trends promise the greatest significance as opportunities or threats.

The strongest competitive force is regarded as critical from the vantage point of strategy formulation. The competitive steps taken by a firm presents some noticeable effects on its competitors which in turn triggers efforts to counter such firm moves. He asserts that rivalry among the competitors is a competition for positions through tactics that include competition over prices, advertisement battles, introducing new products and increased customer service. Firms can influence the five competitive forces through strategies formulated after critically analyzing and identifying the key driving factors defining the industry. To benefit from competitiveness and sustainable advantage, firms ought to create value for a customer which is possible through fast responses to the ever changing business environment. However, Porter ignores the fact that government is a force that influences competition within an industry and this can be understood in isolation of the five competitive forces he concentrates on (Porter, 1990).

Empirical Literature Review

Strategy

Strategies are critical in the process of navigating the marketplace. As noted by Wamalwa et al., (2019) strategies are critical in giving a firm direction and purpose for marshaling resources effectively while at the same time coordinating various decisions. Further studies show that in Africa, firm performance positively relates to strategies. This has been shown by Amoako-Gyampah and Acquah (2008) who indicated that firm performance in Ghana positively correlates to competitive firm strategies. Namusonge (2014) indicated that firms in Kenya are flexible and use more than one strategy. Focus strategy used especially in the agriculture sector where firms concentrate on a select group in the industry and tailors strategy to exclusively serve this group.

Entry Strategies of Dairy Processing Firms

New Product Development (NPD) is an important strategy for entering the retail market. Hollingsworth (1994) observes that thousands of new food products are introduced into the retail market but these products face almost certain extinction and only a handful record success. Similarly, Graf and Saguy (1999) note that new products are the lifeline of food companies and the correlation between research and development (R&D) spending and sales is high which means most food companies spend large percentages of their internal R&D finance on product development and applied research. Rudder et al., (2001) concludes that new products are either original, improved or modified products developed through research and development efforts. However, truly innovative products that have never appeared in the market under any guise remain extremely rare. Suwannaporn and Speece, (2003) assert that NPD in the food processing industry is market driven. NPD concentrates majorly on improving quality, shelf life and packaging. Lastly, the Institute of Food Technologies (IFT) (2015) argues that protein content has recently been a key area in NPD with dairy products launching “source-of-protein” or “high-in protein” content products.

Distribution stands as a critical strategy for dairy processing firm's entry into retail markets. Muriuki (2011) shows that physical distribution is a factor that affects sales performance of firms in Kenya and success of dairy processing firms is highly dependent on the efficiency and effectiveness of their distribution strategies. Odondi (2001); DfID (2001) and Reardon et al. (2012) argue that dairy processing firms enter markets through licensed market channels that have elaborate systems of distribution and retailing. A strong distribution encompasses investments in cooling facilities located in milk surplus areas. These “cold chains” create a cheap and constant network of supply and distribution system.

Mergers and Acquisitions (M&A) are critical strategies for entering new markets especially among global multinationals in the food processing industry. Martinelli (1999) argues that large domestic firms buy off smaller firms which have strong local market presence and good marketing channels. Belik and Roseli (2002) argue that M&A guarantees expansion and immense marketing channels while Wambui (2018) noted that in Kenya, M&A practiced by large dairy firms for instance the merger between Brookside Dairy Limited and Buzeki Dairy in 2016 served to eliminate competition and expand the market share. This strategy had led Brookside to merge and acquire a string of smaller firms including Ilara, SpinKnit and Delamere. Agritrade (2015) noted that M&A rarely transcend national boundaries but Brookside of Kenya acquired Sameer Agriculture and Livestock Limited (SALL) of Uganda thus gaining market advantage.

Food safety attributes of dairy products is a vital aspect of entering retail chains. Wang et al., (2008) show that food safety is a top concern for consumers in China. National standards, certification systems and safety and quality system requirement have been put in place to regulate safety. Reardon, Henson and Gulati (2010) argue that supermarkets in the developing world have increased product safety as they demand for high quality and safe products from processors. Private quality and safety standards by supermarkets and their enforcement of the industry public standards is a trend among most developing countries. Similarly Blackmore et al., (2020) found that in India, Kenya and Tanzania supermarkets tend to exclusively sell pasteurized milk. These formal entities observe high standards of cleanliness and food safety. In Kenya, Kangethe et al. (2018) states that dairy processors in Kenya have the capacity to handle milk safely. Practices such as Hazard Analysis Critical Control Point (HACCP), Good Manufacturing, and Hygienic Practices guidelines are practiced. Other studies such as Mtimet and Karugia (2020) show that preferred places for pasteurized milk which is considered safer than raw milk were supermarkets and hypermarkets.

Empirical studies show that diversification is a strategy for accessing markets. Kariuki (2016)

concludes that access to markets for diversified products has an influence on the performance of dairy processing firms in Kenya. Dairy processing firms have therefore, adopted diversification as a strategy to access markets including retailers. Mwangi and Gakobo (2018) indicate that dairy processing firms in Kenya have diversified and produce various products depending on the size of the firm. Large and medium dairy firms such as New Kenya Co-operative Creameries, SALL, Githunguri dairy, Kinangop and Brookside produce a range of products that include yoghurt, refined milk, fresh milk, ghee, margarine and cream. Small dairy firms specialize and exclusively produce one or two product that may either be yoghurt, Cheddar and dessert.

Sustenance Strategies of Dairy Processing Firms

Slotting allowance is a common practice in the relations between supermarkets and agro food processors and manufacturers. Hamilton (2003) observes that this concept is generically used to represent transactions that may include payments such as introductory fees for new products, floor charges for processors to make sales presentations, periodic stocking fees for existing products, and display fees for special merchandising and promotion. Slotting allowance may be paid by a food processor in exchange for retail concessions that may include to acquire a relatively more desirable shelf space position in the supermarket or to exclude rival processors from obtaining shelf space through an exclusive territory arrangement.

Innes and Hamilton (2012) argue that in an oligopsonistic market there are numerous processors competing to sell products to few large and powerful supermarkets. Similarly, Nadonde and Kuada (2017) argue that the number of suppliers is higher than supermarket outlets which give retailers flexibility in choosing suppliers and the advantage of dictating terms of trade. An oligopsonistic processor therefore, has incentive to pay slotting allowance to retailers as this avails an

opportunity to the contracted processor to negotiate a higher wholesale price for products.

Challenges Faced by Dairy Processing Firms

In Kenya, dairy processing firms are constrained by lack of equipment, lack of skills, competition and lack of power. Njarui et al. (2010) found that dairy processing firms face distribution and marketing challenges that include competition from other processors, irregular payments, poor road infrastructure and unstable prices. Kenya's Ministry of Livestock Development (2010) observes that large and small specialized dairy processing firms have limited production for high value products (butter, cheese, cream, ghee, and yoghurt) due to limited local consumption but regional markets have a great potential for these products. This is an industrial challenge but in recent times some processors have changed strategies and are searching for niche markets and processing of products such as colorful flavored UHT milk, low fat milk, fruit yoghurt targeting the youth and urban areas.

Emongor and Kirsten (2009) note that supermarkets prefer sourcing from large suppliers due to consistence in quality and quantity. In South Africa supermarket chains in the region import products and rarely source from local food processing firms. Food products sold in South African owned supermarkets located in Zambia, Botswana and Namibia shows that processed foods are imported from South Africa. This factors close out the local firms out of the chains. Das Nair (2017) argues that large supermarkets have considerable buyer power and control on the pricing and terms of trade. The interactions with supermarkets are constrained by costs on access to shelf space, refrigeration space for products, preference for dominant suppliers, standard legal requirements, supermarket private standards such as barcoding, packaging, sustainability criteria, religious requirements and on-going audits which are paid for by the suppliers.

Supplying firms face challenges that include acceptance of trade credit, reliability, return policy, packaging, well-promoted products and poor prices. These factors influence suppliers chosen by retailers. In addition packaging is a very strong

criterion for selection of suppliers and retention of their products in supermarket shelves. It involves product color, packaging material, products temperature, compostability, brand name, leak resistance, capacity and value. Innovative strategies in terms of packaging, distinguish products of small, medium and large processors (Nandonde and Kuada, 2016)

Other studies observe that standardization of safety standards poses a challenge to food processors. Malik et al. (2014) opine that food safety standards include safety and quality in processing. In developed and developing countries unprecedented challenges to processors include globalization of food trade; burgeoning of processed food products with increased amounts and numbers of additives; shifts in food consumption patterns; and more intensified food production systems. Lastly, Slotting allowance demanded by retailers is a challenge for food processing firms. Hendrickson et al., (2001) writes that trade promotions paid by processors (display fees, presentation fees, failure fees and pay-to-stay fees) pose a huge challenge as they amount to large sums every financial year. These finances are paid due to the market power of retailers and also serve as a tool for discriminating between large, medium and small processing firms which pushes some processors out of business therefore, undermining established distribution channels. However, some strong processing firms in the industry have huge successful brands and have an edge in the power relationship. Srivastava et al., (2012) observe that slotting allowance in India is not charged by retailers as in the U.S and China as the Fast Moving Consumer Goods (FMCG) market experiences low proliferation of brands meaning retailers stock the usual brands. Though suppliers are charged a small administration fee, they are required to contribute to the promotional and advertising costs.

METHODOLOGY AND DATA COLLECTION

This paper employed a case study research design and was conducted in Nairobi County, Kenya. Primary data was gathered through interviews where a case study guide served as the data

collection tool. Primary data was also gathered through observation where an observation schedule containing a checklist was used to collect information for developing a narrative account. Some of the issues observed included certificates displayed in the firm's premises; health and safety standards; processing equipment used; and proximity to the market and raw materials. Secondary data was gathered from existing material including books, journal articles, government reports, published theses, and websites among other written material

Dairy processing firms in the County were selected according to their sizes where the number of employees was used to categorize firms as; small, medium or large. Small dairy processing firms had less than 49 employees; medium firms had between 50 and 99 employees while large firms had more than 100 employees. On the other hand, four large supermarkets (Uchumi, Nakumatt, Tuskys and Naivas) were selected based on the fact that they are old players in the retail sector and they control the largest percent of supermarkets' retail market in terms of number of outlets and generated revenue. These supermarket chains control a giant share of the market share in the retail sector. They are also located strategically across Nairobi which is a crucial market place for the retail sector.

The target population for this study were dairy processing firms operating in Nairobi County. These firms must have been supplying dairy products to the four big supermarkets (Uchumi, Nakumatt, Tuskys and Naivas) in this County. Nairobi County hosts Kenya's capital city, it has the highest urbanization levels, and is the most populous in the country. It also hosts a high concentration of dairy processing firms dominated by few large dairy processing firms, a high number of small and medium dairy processing firms that process a range of dairy products including high value dairy products (Food Business Africa, 2014). Furthermore, the dairy processing firms operating in Nairobi County supply dairy products to the main supermarket retail chains including Uchumi, Nakumatt, Tuskys and Naivas (Ouma et. al., 2013).

There were 11 dairy processing firms in Nairobi County as compiled from the Kenya Dairy Board, supermarkets procurement list, internet searches,

published material and through directly contacting dairy processing firms to determine their location and also competitors in the County. The top level management personnel, heads of departments and heads of specific firm operations in these dairy processing firms formed part of the respondents. These respondents were engaged through interviews that were conducted in their respective firms. The interviews were conducted in the processing firms to enable the researcher to observe some of the issues of interest to the study.

The researcher applied sampling as a technique for selecting dairy processing firms involved in the study. Two rounds of sampling were conducted where the first round was a census of the eleven dairy processing firms in order to obtain data regarding their sizes based on the number of employees. This was followed by stratified random sampling technique which aided the researcher to create three categories of dairy processing firms. Each of the strata was exclusive and contained large, medium and small dairy processing firms respectively. Stratified random sampling was preferred in order to attain a proportional representation from the three different categories and to also ensure units in every stratum have similar attributes.

Random sampling technique was applied to select dairy processing firms from each stratum for inclusion in the sample. In this process, the 11 dairy processing firms were allocated numerical values from 1 to 11. These numbers were randomly sampled by use of a computer program (Stat Trek Random Number Generator) in order to randomly select two firms from each of the strata. The selected firms were contacted for purposes of carrying out the study. However, only four firms responded positively (2 large, 1 medium and 1 small). Therefore, the researcher replaced the firms and contacted other firms for inclusion in the study. However, the replacement firms declined to participate and therefore, other firms were contacted for inclusion. The study ended up with four large firms, one medium firm and one small dairy processing firm which accepted to participate.

Primary data from these dairy processing firms was gathered through interviews with the use of a case study guide as a data collection tool. The data

gathered was transcribed and cleaned for purposes of analysis. Data analysis was conducted through thematic analysis where data was examined for recurring patterns of core themes between and within the transcribed reports (Bryman, 2015). This data was presented using a table and also in narrative form, suitable for qualitative data.

FINDINGS AND DISCUSSION

Firm Characteristics

The findings indicate that dairy processing firms are differentiated on grounds of age and number of employees. The number of employees was used as a proxy to categorize firms as small, medium or large. The findings reveal that the actual number of years these dairy processing firms have been in operation range from 6 to 92 years (Table 1). This indicates these companies have surpassed the psychological three years of operation barrier where most firms collapse before attaining the age of three.

Table 1: Characteristics of Dairy processing firms

Dairy Processing Firm	Age of Firm (Years)	Number of Employees	Size
Firm 1	27	350	Large
Firm 2	92	1500	Large
Firm 3	8	900	Large
Firm 4	18	200	Large
Firm 5	6	68	Medium
Firm 6	10	10	Small

(Source: Field Data, 2017)

Regarding the type of machinery used in production, findings show that production equipment used by dairy processing firms was either semi-automated or automated machinery. The levels of technological adoption varied from large, medium and small firms. Large firms were highly automated with majority of them automating functions such as packaging and wrapping of the dairy products.

This study also sought to find out the health standards and safety precautions in the premises and area of operations of the dairy processing firms. From observation, the dairy processing firms met the minimal standards set by the regulatory authorities. Safety gear, protective instruments, special attire for specific locations, fire safety equipment, floor hygiene, medical kits, aeration and lighting were all adhered to. Copies of the occupational health and safety policy were pinned at specific points in most of the processing plants.

Entry and Sustenance Strategies of Dairy Processing Firms into Supermarkets

The study revealed that New Product Development (NPD) is variably applied by small, medium and large dairy processing firms in Kenya. Small dairy processing firms are mainly specializing firms that prefer status quo as they mainly produce unique high value products as observed in Firm F6. The medium dairy processing firms also consider NPD as a strategy for penetrating into supermarkets. Medium dairy firms introduced new products such as bottled water for purposes of accessing supermarkets. The products were of high quality, are fast moving and have relatively lower production costs. On the other hand, large dairy firms have experience in NPD and have successfully launched a number of new products. Most of these dairy processing firms have penetrated the supermarkets but they seek to use NPD to expand their market share and wade off competition. Apart from R&D, large firms are keen to consider consumer feedback as an avenue for NPD. The new products mainly target the refreshment and corporate markets as well as new geographical areas regionally and internationally. The findings also indicate that large firms seek to introduce new products that are long lasting and have a long shelf life (milk powder and Extended Shelf Life). Lastly, several large dairy firms (F1 and F3) have NDP strategies targeting new products in the non-dairy product category (juice and water). These findings echo conclusions of Hollingsworth (1994); Rudder et al., (2001) and Suwannaporn and

Speece (2003) who allude to the value of NPD. New products are mainly in the form of new flavors for dairy products, long shelf life products and non-dairy products such as water, honey and juice.

Market and marketing strategies are important in the entry process into supermarkets. Dairy processing firms concentrate on expanding sales to supermarkets they supply products to and also upcoming second tier level supermarkets. The small, large and medium dairy processing firms have different marketing strategies. Small specializing dairy processing firms dealing in premium products concentrate on the middle and upper class citizens and therefore, one-on-one marketing is preferred while dealing with supermarkets. Medium dairy processing firms, on the other hand, employ direct marketing strategies where personal contact is involved. It also involves flexible one-on-one negotiations with each supermarket. Large dairy processing firms (F1, F4 and F3) have varied marketing strategies. Large firms conduct advertisements on new and old media, set up bill boards and conduct corporate social responsibility (CSR). Particularly, large firms have an online presence with websites and social media pages. Further to this, large firms have interactive social media platforms (Facebook page and twitter handle) where pictures, videos, promotional material and information are posted. These platforms offer chances for popularizing products and marketing the firm in the online community. They are also a symbol of a modern firm. These findings update the literature by Odoni (2001) DfID (2001) and Reardon et al. (2012) which fail to capture the fact that new forms of marketing are now in existence and dairy processing firms have more options.

Regarding product diversification strategies, dairy processing firms seek to increase their product categories and also the variety of each category as this increases chances of success through accessing and penetrating supermarkets. The current study observed that dairy processing firms deal in high value products such as yoghurt, as these products fetch higher prices, while products that include fresh milk remain a prerogative of large dairy processing firms. Fresh milk is capital intensive, sensitive and has high competition. Recent patterns

show that dairy processing firms are venturing into non-dairy products such as water, honey and juice which have succeeded in supermarkets. Small dairy processing firms strategically produce one high value dairy product especially in the fermented category (yoghurt). This category is easier to process; find markets in supermarkets; and the steps for processing such products are readily accessible and easy to follow. The specialization strategy also allows for maximum utilization of available resources for firm operations and also allows for high quality dairy products.

Medium dairy processing firms specialize in several value-added products in the fermented category as their main dairy products (yoghurt and 'lala'). These dairy firms also have plans to introduce new products such as water and fresh milk as they are on a growth path. Large dairy processing firms on the other hand deal in a range of products from fresh, fermented, milk powder, butter, ghee, and cream. Their main product is fresh milk which records higher sales volumes compared to other products. The study established that high value products (value added products) have higher profit margins compared to other dairy products and therefore, large firms seek to increase the output volume of value added products. This finding corroborates the study by Kariuki (2016) who established that the range of products of a dairy processing firm was crucial in gaining entry into the supermarkets and the firms are keen to diversify volumes of value added products as it has a positive influence on accessing supermarkets. Similarly, Nadonde and Kuada (2016a) indicated that retailers prefer sourcing various products from a single supplier in order to reduce operation costs.

Packaging as a strategy has been capitalized on by the dairy processing firms which consider various aspects of packaging in order to market their products. Findings show supermarkets have little influence on packaging but they serve as lucrative channels of relaying consumer feedback on the packaging preference of consumers. Small firms' (F6) packaging strategy is centered on market requirements. Firms use R&D and market research to establish consumers' preferred packaging material and design and adopted that to inform the strategy of using bottles. Small firms have limited

varieties of packaging but prefer the bottle which is cheaper and easier to stack and transport. The medium dairy processing firms (F5) package products in cups and bottles. This is strategically centered on the fact that markets are segmented and different clients prefer specific packaging quantities and designs. Therefore, medium dairy firms categorized packaging into two segments where the cups handle smaller quantities for the small scale consumers while bottles are for large quantity packages for 'executive consumers'. The color and design of the package is also warm and friendly in order to attract consumers. Medium firms have adopted several packages that suit market requirements as well as their financial capabilities.

Large dairy processing firms strategically consider consumer feedback, R&D and have innovated ways of packaging for specific markets. These firms have a variety of packages for different products under production. Findings reveal that a specific product category has suitable packaging which aligns to handling, cost, transporting, refrigeration, storage, volume, safety, target market and longevity. Large firms (F1, F2, F3 and F4) however, try to strike a balance and adopt the most effective and efficient package. Further to this, the packaging material is attracting environment concerns and dairy firms are adopting recyclable containers.

This study revealed that distribution strategies are applied by dairy processing firms in varied ways while entering supermarkets. Small dairy processing firms (F6) distribute through self-delivery, medium firms conduct self-delivery but hire distributors in case of excesses (F5). Medium firms prefer this strategy as it gives a personal touch to client supermarkets. Large firms (F1, F3 F2) practice self-distribution and contract distributors concurrently. Most of these firms have a wide geographical coverage and diverse market. This requires a robust distribution network that these dairy processing firms complement with contracted distributors or agents. This observation was also made by Muriuki (2011) through his study on physical distribution. However, this study segments firms and elaborates the practice as conducted by each category. Odondi (2001); DfID (2001) and Reardon et al. (2012) address the distribution system and their

conclusions on elaborate systems through distributors and cold chains clearly march our findings regarding the large dairy processing firms.

This study found that Mergers and Acquisitions are common especially among the big dairy processing firms. Small and medium firms have not engaged in M&A. Three of the four large dairy processing firms (F1, F2, and F3) have either acquired or merged at some point. One of the firms (F3) acquired a small outfit and went on to make it one of the fastest growing dairy firms while another firm (F1) was acquired by new investors. M&A in these cases as this study found out was for purposes of increasing the asset base, injecting new capital, expanding production machinery, and gaining new market networks especially the powerful supermarket network. These findings correspond to the studies by Martinelli (1999) and Belik and Roseli (2002) who argue M&A serves to increase market networks. The findings also indicate new ideas on why dairy processing firms engage in M&A therefore, updating the literature and giving a case of firms in the Kenyan dairy industry.

Regarding the sustenance strategies used by dairy processing firms into supermarkets, Davis et al, (2009) and Hamilton (2003) showed that organizational structure and slotting allowance were crucial sustenance strategies for dairy processing firms. Small firms (F6) have lean and flexible organizational structures that allow personal contact and sustenance of relations with supermarkets by any personnel who establishes contact. This indicates small firms have a fluid organization structure with flexible terms that require marketing to be a prerogative of every personnel. Medium dairy processing firms are structurally organized into a hierarchical model. The organizational structure is rigid with no overlaps in the allocated mandates and therefore, marketing remains under the mandate of the sales and marketing department who are charged with dealing with supermarkets. Large dairy processing firms have a broad and rigid organizational structure. They have many departments which work autonomously with no overlaps in the mandates therefore, the structures are rigid.

This paper also revealed that slotting allowance as a strategy is a common industrial practice and

supermarkets have control over any payments made. It is informal in most cases but this is not the case with two dairy processing firms (F1 and F3) which have formalized these payments in written JBP's with supermarkets. Findings indicate that supermarkets have control over these payments but the arrangements vary from one dairy processor to the other. Small dairy processing firms specializing in a single, unique and high value premium product rarely pay slotting allowance to supermarkets. However, the intense competition in the industry plus the influx of new products is making slotting allowance a common practice for small dairy processors. Medium dairy processing firms also deal in high value and competitive dairy commodities. However, the need to secure strategically located shelves and space has pushed medium firms to pay slotting allowance as a strategy to secure gondolas. The funds are flexible depending on agreement between the firm and the supermarket involved.

Large dairy processing firms have also been strategically paying slotting allowance to supermarkets. However, two large dairy processing firms (F1 and F3) have formalized slotting allowance through a written Joint Business Plan (JBP) with supermarkets. The JBP stipulates the amount, period and secured shelf and/or fridge space. Further to this, it stipulates the percentage discount large dairy processing firms offer to the supermarket for sales made. These findings corroborates Hamilton (2012) who stated these transactions have become normalized in some industries. Further, Innes and Hamilton (2012) and Nadonde and Kuada (2017) who show in an oligopsonistic market slotting allowance works to the advantage of supermarkets as it reduces the profit margins of dairy processing firms.

Challenges Experienced by Dairy Processing Firms in Accessing and Sustaining products in Supermarkets

This paper established that dairy processing firms face challenges relating to importation of products. Large dairy processing firms (F1 and F2) face access challenges into some supermarkets which

sell imported dairy products. Firm F2 deals in powdered milk which is also imported by supermarkets from external markets while firm F1 produces lactose free milk which some supermarkets also import. Such imports compete with local products thus affecting sales volumes and profit margins as the imported products are cheaper. This finding relates to Emongor and Kirsten (2009) who observed that supermarket chains in Zambia, Botswana and Namibia import products from South Africa and rarely source from local food processing firms.

In terms of exports only three large firms have managed to achieve such a feat. Firms F1, F2 and F3 export dairy products to the regional and/or international markets. These firms export to neighboring countries including Tanzania, Uganda, Rwanda, Somalia and Sudan which have less developed industries. Firm F2 exports further to countries like Burundi, DRC and Zambia and also the Middle East (Oman and Qatar). Findings reveal that a large percentage of exported products are value added products such as long life milk, creamery butter, cream milk powder, skimmed milk powder, ghee, and cheese. One of the main challenges identified include non-tariff barriers (packaging, content recipe, quantity, labeling) which are a major stumbling block to dairy processing firms. Large firms also face different country specific standards (bacteria load and quality) which complicate bulk production of export products that fit varied standards set by different countries. This finding echoes McCormick et al. (2013) who stated that manufacturing firms exporting to other markets must adhere to not only the Kenya standards but also phytosanitary regulations of the countries they export to.

Another challenge is trade credit where delays in payment of goods supplied to supermarkets is common. Small dairy processing firms are more affected as their contracts with supermarkets indicating a forty five days grace period is mostly disregarded. Medium dairy firms also indicated the terms with supermarkets especially large ones are not adhered to and big supermarkets have a tendency to exceed the payment timelines which affects the cash flow of the dairy firms which in

turn negatively impacting payments to suppliers and acquisition of production material and instruments. Lastly, large dairy processing firms (F1 and F3) have put in place Joint Business Plans (JBP) with supermarkets that stipulate payment period within which payments are made after the delivery of products. Firm F4 requires a bank guarantee before allowing trade credit services with supermarkets. Generally, big supermarkets are powerful in the dairy product value chain and have a tendency for noncompliance with payment agreements leading to litigations.

Trade promotions pose a financial challenge to dairy processing firms. Large dairy processing firms engage in trade promotions stipulated in JBPs with supermarkets. However, the cost of trade promotions are solely met by dairy processing firms. This is similar to sentiments of Nandonde and Kuada (2016) argue that supermarkets choose and retain supermarkets based on trade promotions. The case is different for small dairy processing firms which do not conduct trade promotions with supermarkets. Specialized firms (F6) deal in unique products and do not engage in trade promotion activities as supermarkets have no alternative to their premium dairy brands. Costs involved in launching and creating product awareness is high and supermarkets offer little help in sharing these costs. This finding relates to conclusions of Srivastava et al. (2012) who found out that processing firms pay for promotions as well as administration fees to supermarkets.

Supermarket private standards pose a challenge to dairy processing firms which have to fulfill these exclusive preferences. Small dairy and medium dairy processing firms adapt to some supermarket private standards while large dairy processing firms show mixed results. Some fulfill private standards by a specific supermarket or groups of supermarkets while others do not. The study challenges Das Nair (2017) by stating private standards are not a challenge to dairy processing firms especially large ones. Firms F2, F3 and F4 indicated that dairy firms dominate in terms of products and therefore, dairy processing firm set the pace for supermarkets. The small and medium firms positively compare to Das Nair's (2017) conclusion that supermarket private standards have

a negative effect on the cost of doing business as well as the profit margins.

The study also established that dairy processing firms concentrate on promoting their brands and discourage supermarkets from producing 'own label' dairy products. Small and Medium dairy firms cannot brand supermarket goods with private labels as this is counterproductive to their growth objectives. However, large dairy processing firms are flexible. Firm F1 and F2 customize some dairy products for supermarkets. Firm F3 stated 'own label' products do not have an effect on already established dairies in the dairy industry. Large dairy firms conducting 'own label' ensure contracts are strategic to their branding and income. These finding corresponds to Srivastava et al. (2012) who argued that large dairy processing firms only participate when their brand and income are not compromised.

RECOMMENDATIONS TO DAIRY PROCESSING FIRMS AND POLICY MAKING AUTHORITIES

This paper recommends that small, medium and large dairy processing firms automate their distribution systems and synchronize this to supermarket procurement systems. Automated and synchronized systems between these two actors in the value chain would be useful in alleviating the loopholes present during returning of damaged and/or spoilt dairy products from the supermarkets. Moreover, automation of these systems would be critical in monitoring sales, detecting stock availability and determining when to supply products to supermarkets.

The marketing strategies of dairy processing firms, especially small and medium dairy processing firms, ought to expand and adopt modern avenues including new media. This marketing strategy should be conducted in conjunction with supermarkets as they are the main channel of dairy products.

This study revealed that the packaging of dairy products is informed by consumer feedback as well as R&D. However, current trends show that the preferred packaging material by dairy processing firms is plastic. This paper recommends that dairy

processing firms adopt either biodegradable or recyclable packaging material in order to cushion against future environmental regulations.

There is need to address the issues regarding trade credit. This paper notes that there is no clear framework governing payment of debts to dairy processing firms especially by collapsing supermarkets. The available channels include litigations against collapsed and/or cash flow struck supermarkets. This paper recommends that dairy processing firms, national regulatory bodies and other national authorities develop sustainable policy frameworks that protect both the dairy processing firms and supermarkets in case of cash flow problems or bankruptcy as huge debts owed to dairy processing firms by supermarkets continue to curtail their growth. Supermarkets have to be regulated through a debt ceiling addressing the maximum debts they can owe suppliers.

Regarding the importation of dairy products, this paper recommends that Kenya Dairy Board (KDB) regulates importation of the same especially lactose free milk and milk powder which threaten domestically produced dairy products particularly by the large dairy processing firms.

There is need to level the regulatory playing field in the dairy industry. This paper notes that there is need to uniformly enforce regulations and standards within the industry. Large dairy processing firms are favored and this practice should be regulated by KDB through uniform application of regulations and standards in the industry.

In terms of the market, the study noted that the regional market remains unexploited by Kenya's dairy processing firms especially small and medium firms who specialize in value added dairy products. To this end, national authorities including KDB should create avenues such as regional international fairs and exhibitions to popularize products of small and medium firms.

This paper had a limitation that may inform future research. The study focused on the entry and sustenance strategies employed by dairy processing firms while dealing with large supermarket chains only. However, useful insights learned from the inquiry show there is increasing growth and

prominence of second tier supermarkets especially in the current financial crisis that characterizes two of the four big supermarket chains in Kenya. The growing importance of second tier supermarkets, as useful retailers, especially to dairy processing firms shows the need to expand academic inquiry and include these supermarkets. Therefore, future studies should involve the second tier supermarkets.

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The role of top management support in the implementation of public sector supply chain management in the public sector in Harare, Zimbabwe

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Abstract

The study investigated the role of top management support in the implementation of public sector supply chain management practices with specific reference to public procuring entities in Harare, Zimbabwe. In order to achieve the intended research objectives, the study used a quantitative research design where 217 questionnaires were distributed to both employees and management. The study found that top management from the public procuring entities did not provide adequate necessary information and communication technological tools necessary for effective supply chain management planning. It was also revealed that the top management in the public procuring entities does not provide an organizational vision that embraces supply chain management continual improvement. Furthermore, the study concluded that there is no commitment supported by adequate resources on the implementation of supply chain management practices and strategies from the top management in the public sector procuring entities. The study recommends that it should be the role of management to implement realistic objectives and provide supply chain management related training to their employees, enhance teamwork effort and provide priority and attention to internal and external customers. The support of senior management support would greatly influence the successful implementation of supply chain management practices in public procuring entities.

Key Words: Commitment, Public Procuring Entities, Service Delivery, Supply Chain Management Practices, Top Management, Efficiency

INTRODUCTION

This paper is a paper by a PhD student, Denias Kagande, who teamed up with his supervisors and an Oman based Zimbabwean academic to write this paper. It is a University of Zimbabwe PhD degree graduation requirement to have an accepted journal paper. Governments in both developing and developed countries have been progressively adopting various ways of modernizing and improving public supply chain management. Like any other organisation, public institutions have to deal with new supply chain strategies in line with government strategic goals and service delivery charters (Brosze, 2010; Njonde and Kimanzi, 2014; Tseng, 2013). Globally, governments have been investing resources in order to streamline and improve public sector supply chain management practices (Butner, 2010; Njonde and Kimanzi, 2014; Sourani and Sohail, 2011). This has been geared towards the enhancement of tender accessibility, cost saving, efficiency improvement and reduce corruption in supply chain management services.

The Singapore government is renowned for both high efficiency and low corruption, an ill affecting many governments in the world, (Sheffi, 2014). It is important to understand the intricate political dynamics involved in public procurement as a whole in Zimbabwe. It is concerned with service to society, affordability, public infrastructure development, minimising or eliminating corruption, not buying from hostile nations as far as practical and favouring friendly countries, maintaining and increasing industrial production, pleasing the political constituencies, a watch on the next election, pleasing public opinion, fairness of distributing the national cake, economic growth considerations, industrialisation, value for money considerations, transparency, fairness, access to government business by all, buy Zimbabwe considerations, import substitution, sanctions busting because of European and United States of America imposed sanctions on Zimbabwe, promoting investment in the country, punishing businesses associated with opposition political outfits (though unwritten), promoting innovation and research, helping vulnerable groups and segments, promoting good health and prosperity, political correctness and uplifting marginalised groups. There could be other reasons normally associated with any conscious political system.

Transparent, reliable efficient institutions and rule of law were important than ever before for risk-taking and innovation, and national wealth, power and economic opportunity provided for citizens was not a distinction that is bestowed to last forever like an honorary degree, but must be earned continually like a basketball player's batting average, (Friedman and Mandelbaum, 2011). This was a stark warning to all countries to avoid complacency. Each country had to check that its institutions had a no-nonsense business and service culture, and that none became an enclave and hideout for lazy uncommitted workers and thieves. Findings by Jraisat & Sawalha (2013:194-207) identified the high-order factors of quality control (QC) and demonstrated the role of QC in SCM, acting as the main strategy to improve supply chains. Management support is expected to come in handy and help maintain quality standards which benefit all interest groups naturally.

In developing countries, such as Zimbabwe, good supply chain management practices are increasingly being recognized by many public institutions. Supply chain management has been a positive catalyst for just-in-time inventory management resulting in effective service delivery in public institutions. This has been at a time when procurement inventory in most of Zimbabwean public institutions has been over 60% of total expenditure (Carter and Easton, 2011). However, the demand for lean inventory in public institutions has been dismally failing to have corresponding long-term supply chain strategy due to inadequate top management commitment. Indeed, it has been noted that the commitment of top management in the implementation of supply chain management practices issues has remained peripheral (Achanga, Shehab, Roy and Nelder, 2005; Basheka, 2008; Wogube, 2011). Consequently, this has negatively hindered the smooth implementation of supply chain strategy which has been widely praised for reducing overstocking in line with the public institutions service delivery charters.

More so, most top-level managers in the Zimbabwean public institutions are less concerned about supply chain management issues and are reluctant to allocate adequate financial, technological and human resources to implement supply chain management practices, but the limitations and frustrations that they face must be understood as a country under sanctions. As noted

by Sandberg and Abrahamsson (2010), top management has always been hesitant to fully implement supply chain management practices since this involves robust amounts of documentation work. As a result, lack of top management commitment in the implementation of supply chain management practices has been a stumbling block for the implementation of overall strategy in most public procuring institutions. The other pertinent challenges were related to partly lack of top management support in the successful implementation of supply chain management practices in public procuring institutions which include organisation behavioural issues such as dismal employee commitment, poor communication skills and lack of appropriate supply chain performance evaluation goals. More worrisome, Malela (2010) notes that only 14% of top management in the public institutions have been actively involved in driving, developing and executing supply chain strategies. In light of the above discussion and comprehensive literature review, the study was initiated to achieve the following research objectives:

- i. Establish the role of top management support on implementation of supply chain strategy in public institutions in Zimbabwe.
- ii. Determine the effect of top management involvement on implementation of supply chain management.
- iii. Establish whether top management empowers employees to solve supply chain management related problems.

LITERATURE REVIEW

The profound significance of top management commitment in supply chain as well as successful procurement planning implementation is widely recognized by various scholars and practitioners (Babakus, Yavas, Karatepe and Avci, 2008; Erik and Mats, 2010; Fawcett, Ellram and Ogden, 2009; McKinnon, 2010). For instance, Fawcett, Ellram and Ogden (2009) argue that the commitment of management would represent a shift towards enhancing efficient and effective supply management practices in public sector organisations. In the same vein, Abrahamsson

(2010) opines that the support of top management is the most important ingredient for the successful implementation of supply chain management practices and procurement planning in both public and private organisations. Thus, it can be argued that the success of any supply management system in an organisation is based on senior managers offering not only strong leadership and active support but also demonstrating unfettered commitment. This research seeks to test the hypotheses:

1. Top management involvement in the implementation of supply chain management helps improve operations.
2. If top management empowers employees to solve supply chain management related problems systems work much better.

The field research findings in this research would either accept or reject these hypotheses. Top management plays a leading role through the provision of necessary resources, establishing a quality supply chain management structure as well as management of the whole process through close monitoring and evaluation. This should be complimented by an organisational culture and climate that is open for cooperation and teamwork in supply chain management (Achanga, Shehab, Roy and Nelder, 2005; Basheka, 2009; Wogube, 2011). In other words, leadership with a deep comprehension of how to lead change process must lead supply chain management processes since this should be a long-term organizational strategy. In the same context, Aketch and Karanja (2013) believe that senior management should always put in their mind a supply chain management agenda. According to Ben Brik, Mellahi and Rettab (2013), the various factors that relate to top management commitment include supplier development actions such as direct investments in supplier organisations, continuous site visits and supplier recognition. Usually, when there is no top management commitment then the resources may proscribe capability and discourage cooperation intentions. In other words, without the senior management commitment, the vision required for the success of supply chain cannot be achieved.

Furthermore, the implementation of supply chain management practices in an organisation would require commitment from all levels of staff

including management. This is expounded by Emmett and Sood (2010) who argue that management should also empower and make individual employees accountable for their work. It is also equally important for senior management to understand how supply chain management continuous improvement programmes fits in with strategic goals. According to Prugsamatz (2010), top management is responsible for establishing overall organisational goals and ensuring clear alignment. These goals should be embedded in the organization's business plan and become part of the normal day to day business. Moreover, senior management is also responsible for motivating every employee about the need for significant changes. As elucidated by Basheka (2009), it is the role of senior management to motivate employees by clearly communicating the benefits of continuous improvement.

According to Saleemi (2010), top management must institute leadership capable of driving quality supply chain management transformation processes. In this regard, there is the need for both transformational and transactional leadership in the public sector organisations. This is also stated by Katarzyna (2012) who postulates that top management should be at the forefront of the supply chain management process starting from the initial stages. Gorane and Ravi (2013) note that it is unfortunate that some managers in the public procuring entities do not have enough comprehension of the importance of supply chain management. For instance, although top management with finance or accounting background may appreciate the role of supply chain management practices in terms of impact on cost of goods/services, most of them would not be prepared to deal with the technical requirements and importance of a critical supplier partnership. On the other hand, top management with engineering backgrounds would appreciate the significance of new product development assistance but would struggle with supply chain complexities (Effy and Andy, 2008). Moreover, some of the top managers in the public procuring entities have a general distrust of suppliers and thus regard all supply chains as "suspicious". Other top managers in public procuring entities regard supply chain management as an order expediting function that does not require the need for investing in organisational resources (Lera and Alberto, 2013).

Within the same framework of thought, Omware (2012) argues that lack of top management commitment and support can act as a stumbling block to the success of supply chain management. Consequently, without the senior management commitment, the vision required for the success of supply chain cannot be achieved.

Moreover, it is the job of top management to endorse supply chain management initiatives and provide the necessary resources. As expounded by Adagala (2014), it is only the top level of management that could dedicate resources and realign the incentives for the development of cross functional capabilities. It is also the role of top level management to see that managers at lower levels and employees implement all supply chain management initiatives and programs (Adagala, 2014; Effy and Andy, 2008; Gupta, 2012; Omware 2012). Furthermore, effective planning in supply chain management should be based on trust and shared information among supply chain partners and this should be a fundamental requirement. This is also argued by Mathiyazhagan, Govindan, NoorulHaq and Geng (2013) who opine that top management trust is of profound significance in creating successful supply chain relationships since these heavily depend on interdependency among partners. When there is both trust and commitment among the supply chain partners, there would be positive productivity, efficiency and effectiveness (Aketch and Karanja, 2013; Patricia, 2015). Accordingly, it is virtually impossible to bring other functional departments such as marketing and manufacturing without the commitment and support of top management.

RESEARCH METHODOLOGY AND INSTRUMENTATION

The study adopted a quantitative research design and this ensured that there was complete description of the situation and minimized researcher bias in the collection, interpretation and analysis of data.

The target of the study consisted of employees and management from public procuring entities in Harare. There are approximately 500 employees and management for the selected 10 of the public institutions in Harare (Zimstats, 2014).

The following simplified formula by Yamane (1967) was used to calculate the study's sample size:

$$n = \frac{N}{1 + N(e)^2}$$

where, n = the expected sample size, N = the population, $e = \pm 0.05$, is the level of precision

Thus, a total of 217 respondents were selected to participate in the study. The exact respondents for the study sample were determined using stratified random sampling technique and this was meant to ensure that different groups of the population were adequately represented. Stratified sampling was used to select the respondents in terms of two homogeneous groups (management and employees).

A survey questionnaire was used as the data collection instrument. In line with Achanga, Shehab, Roy and Nelder (2005), a pilot study was used for the purpose of verifying research instrument validity. The pilot test was conducted using 12 questionnaires that were administered to

the employees in the respective public procuring entities. Most of the variables in the questionnaires were derived from supply chain management Fawcett, Ellram and Ogden, (2009); Katarzyna, (2012) and logistics McKinnon, (2010) empirical studies. The completed questionnaires were then checked for both consistency and comprehensiveness (Marczyk DeMatteo and Festinger, 2009). All the questionnaires were self-administered by the researcher using the drop and pick method. After the respondents had filled their views, these were returned within the stipulated deadline that was set.

The completed questionnaires were first checked for completeness and these were then coded and put into particular categories that fitted the research objectives. The data was cleaned, coded, categorized for each of the research variables and then analyzed.

FINDINGS

From the targeted sample size, a total of 202 respondents filled the questionnaires making a response rate of 93.08% as depicted in Table 1 below. The high response rate was a result of exceptional interest in the topic and the absence of political sensitivities.

Table 1. Response Rate

Respondents	Distributed Questionnaires	Returned Questionnaires	Response Rate
Management	35	31	88.57%
Employees	182	171	93.96%
Total	217	202	93.08%

The first aspect that was investigated pertained to the general biographical data of the respondents. These included position of respondents, sex, educational qualifications and working experience. Regarding the biographical information, 53% of the respondents were males whilst the remaining 47% were females. In terms of educational qualifications, the majority of the respondents (57%) had diplomas and this was followed by undergraduate degrees (24%). Additionally, 12% had secondary education only whilst 7% were holders of masters' degrees. It can be argued that the study's respondents were highly educated to comprehend the topic under discussion pertaining to the role of top management support in the

implementation of public sector supply chain management practices. The study also asked about the working experiences of the respondents in their respective public procuring entities. According to the findings, 19% had been with the organisations for less than a year and 25% fell within the 1 year to 5 years category. In addition, 39% had been with organisations for between 6 years and 10 years whilst 17% had been with the organizations for more than 10 years. Thus, it can be argued that the research findings were obtained from respondents most of whom had experienced and noticed supply chain management practices introduced by the public procuring entities over a long period of time.

The table below summarizes the demographic details obtained from the study.

Table 2 Demographic Details of Respondents

Demographic variable	Category	Frequency
Gender of respondents	Males	53%
	Females	47%
Level of education	Secondary education	12%
	Diplomas	57%
	Undergraduate degrees	24%
	Masters' degrees	7%
Working experience	Less than 1 year	19%
	1 year to 5 years	25%
	6 years to 10 years	39%
	Above 10 years	17%

The study first sought to determine whether management provided the necessary information and communication technology tools necessary for effective supply chain management planning. According to the findings, 39% strongly disagreed, 34% disagreed and 20% were undecided. However,

6% agreed with the statement that management provided the necessary information and communication technology tools necessary for effective supply chain management planning and only 1% strongly agreed. The diagram below illustrates the findings:

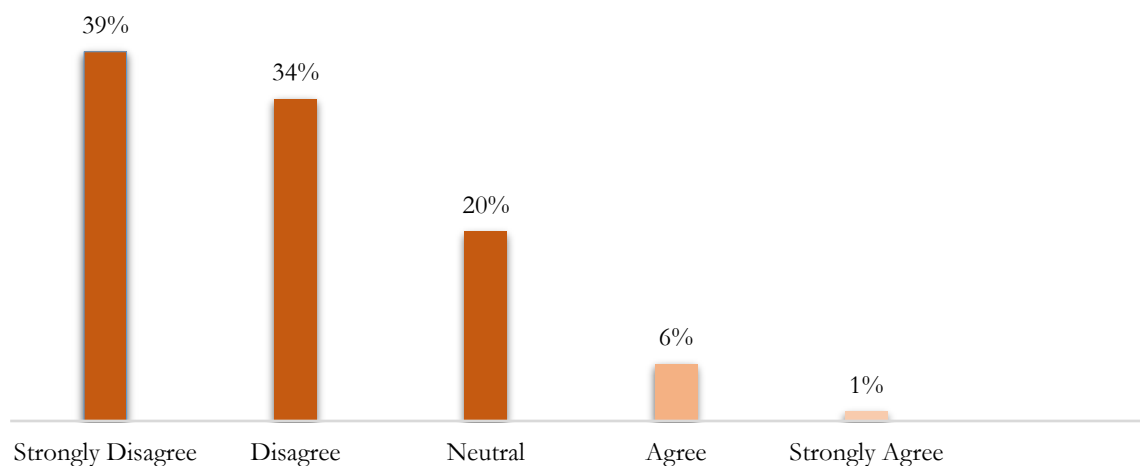


Figure 1. Provision of necessary information and communication technology tools by management necessary for effective supply chain management planning

The above findings illustrate that the majority of the study respondents (73%) believe that top

management from the public procuring entities did not provide the necessary information and

communication technology tools necessary for effective supply chain management planning. The study also asked about whether senior management in the public procuring entities gave utmost attention and priority to the needs of their internal and external customers. According to the findings,

38% strongly disagreed, 29% disagreed and 14% remained neutral. In addition, 11% agreed whilst 8% disagreed. These findings are illustrated below:

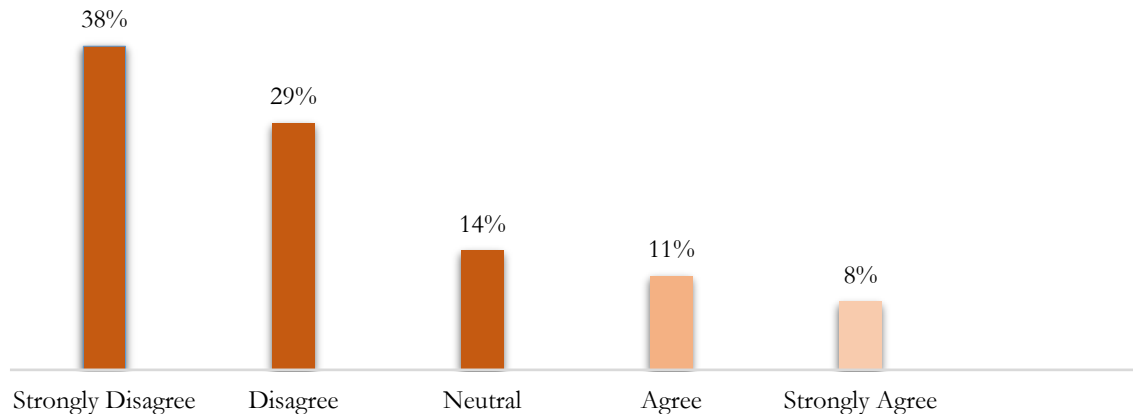


Figure 2. Senior management in the public procuring entities gives utmost attention and priority to the needs of their internal and external customers

The study also sought to determine whether senior management was active in establishing supply chain management vision for continual improvement of public procuring entities. According to the primary

data findings, 28% strongly disagreed, 30% disagreed and 33% were undecided. In addition, the study revealed that 7% strongly agreed with the statement whilst only 2% agreed. These findings are shown below:

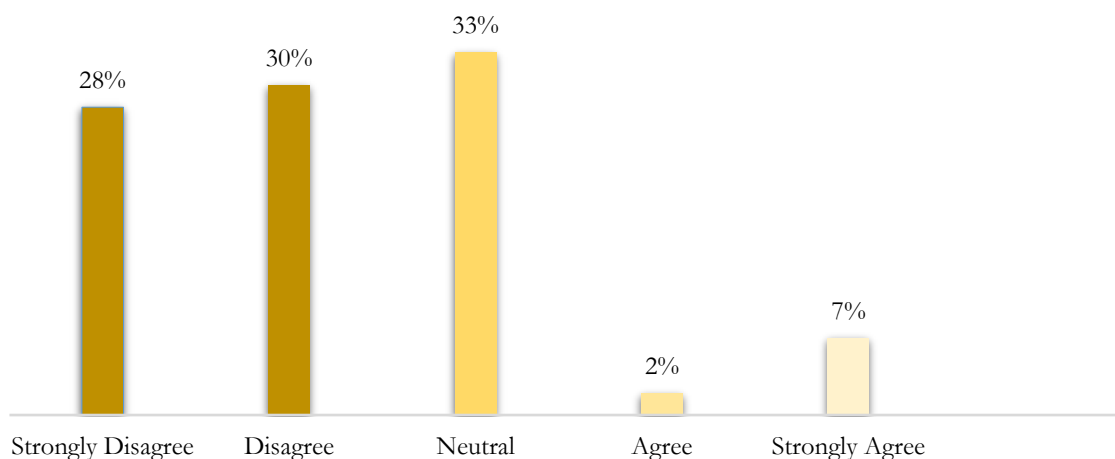


Figure 3. Senior management active in establishing supply chain management vision for continual improvement of public procuring entities

From the above findings, it can be deduced that the top management in the public procuring entities do not provide an organizational vision that would

embraces supply chain management continual improvement. An analysis was done on whether management considered capacity building training

as part of the organization supply chain strategy. From the findings, 23% strongly disagreed, 42% disagreed, 17% were neutral and 11% agreed. Only

7% strongly agreed and the results are diagrammatically illustrated below:

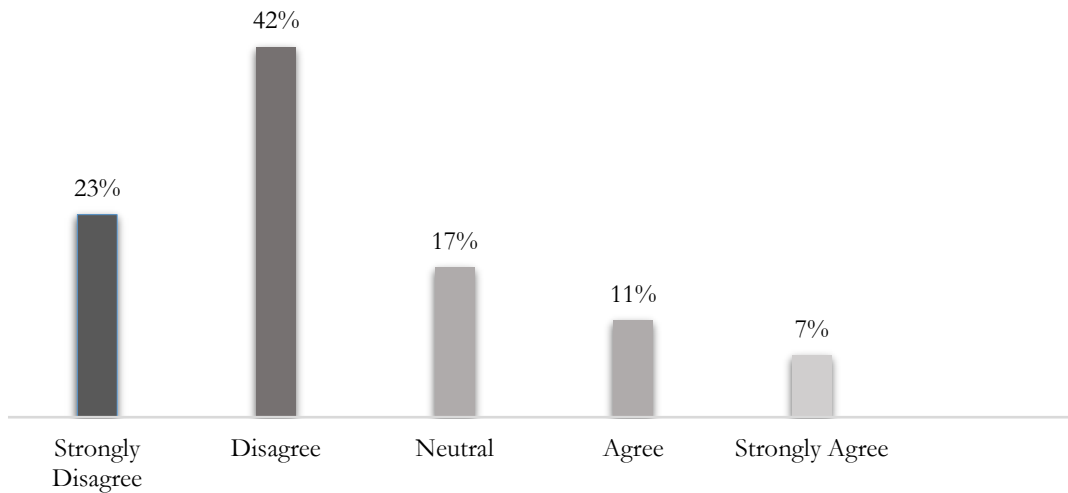


Figure 4. Management considers capacity building training as part of the organization supply chain strategy

From the above findings, it can be deduced that the public procuring entities under study did not regard training as part of organization wide supply chain strategy. This shows that training is not regarded by management as an important tool for the success of public procuring entities in the implementation of various strategies and supply chain management practices.

The respondents were asked to rate the support of the top management in the implementation of supply chain management practices in the public procuring entities. According to the findings, 62% of the respondents confirmed that their support was poor whilst 21% said it was fair. Additionally, 13% of the respondents believed that the support of management was good and only 4% described management support as excellent. These findings are illustrated below:

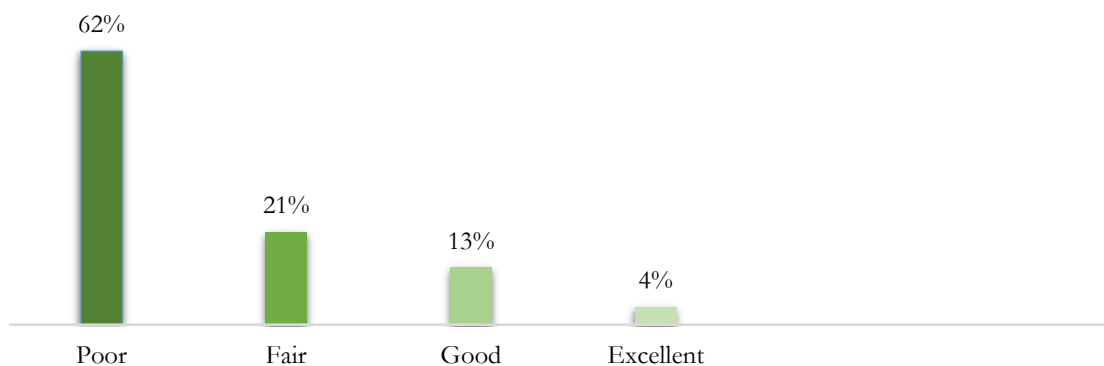


Figure 5. Support of the top management in the implementation of supply chain management practices in the public procuring entities

From the above findings, it can be inferred that there is no good will on the implementation of supply chain management practices and strategies

from the top management in the public sector procuring entities. This invariably implies that the employees in the public procuring entities,

particularly in the purchasing departments, do not work as a team in the implementation of supply chain management practices. One would want to know the reasons for this, quite important.

The study also sought to establish the frequency of management supervision in the use of supply chain strategies in the public procuring entities.

According to the findings, the majority of the respondents (68%) believed that top management never supervises the use of supply chain strategies in the public procuring entities. In addition, 26% stated annually, 5% semiannually and only 1% quarterly. The results are graphically illustrated below.

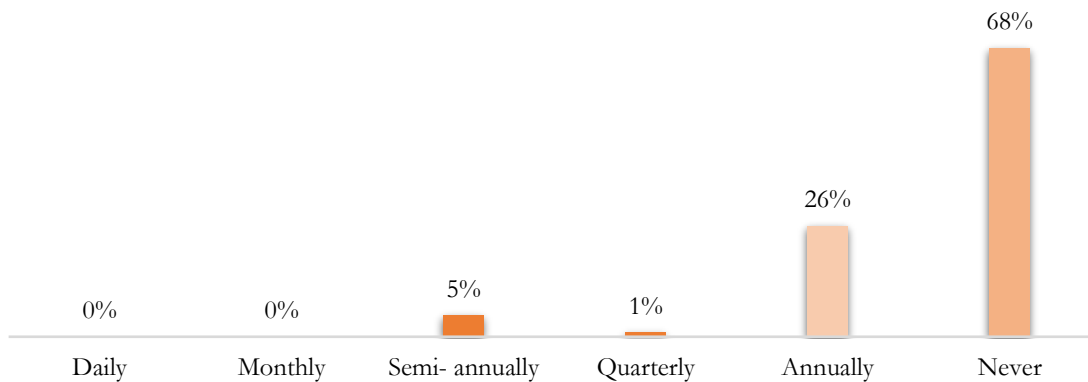


Figure 6. Frequency of management supervision in the use of supply chain strategies in the public procuring entities

The above findings do indicate that, to a large extent, top management in the public procuring entities does not supervise the use of supply chain strategies. This shows that management is not much concerned with the progress of the implementation of supply chain management practices in these public procuring entities.

Regarding top management offering new staff members opportunities to learn supply chain management programs, 38% strongly disagreed, 44% disagreed, 9% were neutral, 6% agreed and 3% strongly agreed. These findings are illustrated below:

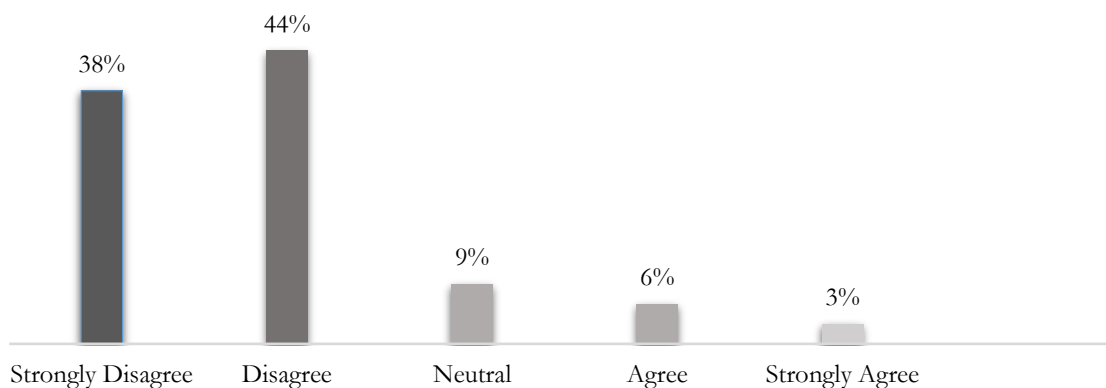


Figure 7. Top management offering new staff members opportunities to learn supply chain management programs

The above findings do show that most of the responses were slanted towards disagreement

(82%). This indicates that the majority of the respondents did not agree that new staff members

were provided with opportunities by senior management to learn supply chain management programs. This shows that the support from the top management regarding new staff members learning supply chain management programs is very poor among the public procuring entities under study.

In order to determine the association between the individual indicators of top management

Table 3. Correlation Analysis. Correlation is significant at 0.05 level (2 tailed).

		Leadership	Top management involvement	Critical resources	SCM practices
Leadership	Pearson Correlation	1			
	Sig. (2-tailed)	0			
Top management involvement	Pearson Correlation	0.257	1		
	Sig. (2-tailed)	0	0		
Critical resources	Pearson Correlation	0.104	0.291	1	
	Sig. (2-tailed)	0	0	0	
SCM practices	Pearson Correlation	0.665	0.609	0.311	1
	Sig. (2-tailed)	0	0	0.063	0

The correlation table showed that SCM practices have positive and significant correlations with two independent variables (leadership $r = 0.665$; $p < 0.05$ and Top management involvement $r = 0.609$; $p < 0.05$). However critical resources exhibited an insignificant association with SCM practices (0.311 ; $p > 0.05$).

The study proceeded to conduct regression analysis to establish the impact of independent variables (leadership, top management involvement and critical resources) on SCM practices. Table 4 illustrates the explanatory power of each independent variable

Table 4. Regression Analysis

Senior Management Commitment	Standard Coefficients	p-value	T- Values
Leadership	0.634	0	3.814
Top management involvement	0.685	0	4.731
Critical resources	0.662	0	3.142
R	0.497		
R ²	0.442		
Adjusted R ²	0.428		
F	24.473		
N	202		

As shown from the above table, there is a positive relationship between senior management commitment and the implementation of supply chain management practices with a multiple correlation of (R) of 0.497. The adjusted R² of 0.428 shows that 42.8% of the variations in the public institutions can be explained by senior management commitment variables such as leadership, top management involvement and critical resources which were used in the study. This implies that other factors not studied in this research contribute 57.2% of the SCM practices. In particular, the regression analysis revealed that leadership ($\beta = 0.634$, $p = 0.000$, top management involvement ($\beta = 0.685$; $p = 0.000$ and critical resources ($\beta = 0.662$; $p = 0.000$ are statistically significant predictors of SCM practices, were positively correlated with customer satisfaction with coefficients of 0.634, 0.685 and 0.662 respectively. At 5% level of significance, the F-statistic of 24.473 indicated that the model is useful in determining a predictive relationship between senior management commitment and implementation of supply chain management practices. The discussions that follow mirror these field research findings.

Discussion of Findings

The primary data findings revealed that top management in the public institutions under study were not proactive in the formulation and implementation of procurement goals with enterprise resource planning as well as supplier coordination. However, these results disagree with Bechini, Cimino, Marcelloni and Tomasi (2008) who argue that top management should be proactive in the formulation and implementation of procurement goals with enterprise resource planning as well as supplier coordination. The findings also do not concur with Faisal (2010) who argues that information and communication technology tools should be introduced by top management as a source of competitive power.

The study also established that most senior management staff in the public institutions did not have the vision that should be used as a tool in communicating overall supply chain objectives for continual improvement. The findings are in disagreement with Vickland and Nieuwenhuijs (2009) who argue that senior management should have the vision that should be used as a tool in communicating overall supply chain objectives for continual improvement. This would result in the

motivation of procurement workforce and alignment of supply chain continual improvement with overall organisational objectives of the organization. In the same context, Achanga, Shehab, Roy and Nelder (2005) argue that it is also equally important to involve a cross section of employees in the process of developing the vision since this would increase both commitment and ownership in the organisation. Further to that, the findings are in sharp contrast with studies by Haag and Cummings (2010) and Njonde and Kimanzi (2014) who concluded that top management play a significant role in the training of new employees especially for the implementation of supply chain management concepts in public institutions. Thus, most new employees in the public procuring entities have inadequate training and empowerment that would result in their inability to identify and resolve any supply chain related challenges and problems thereby hindering organizational effectiveness and efficiency. European law was designed to manage public procurement awarding procedures strictly in order to ensure equality among tenderers as well as high quality in goods and services and, that public contractual activity was subject to a mixture of administrative and private law, (Chirulli, 2011).

Zimbabwean public procurement law was designed along the same lines to plug leakages and shut out corrupt tendencies. What tended to disrupt systems in Zimbabwe was an exodus of employees to regional and overseas countries as they fled the economic meltdown triggered by European and American sanctions. It meant that those trained left and institutional memory embedded in them went with them, including technical know-how on vision, mission and rules and regulations. So, companies continued to be training grounds which have very little employee retention capacity as labour turnover factors were beyond their control but in the political and governmental sphere. Readers need to be educated on this as the wider economy is brought into the equation. Job satisfaction is a crucial factor that determines retention of employees in all industries, Dhanapal, Alwie, Subramaniam & Vashu (2013:128-139). This blunt warning needed no further qualification and was the dilemma facing public entities in Zimbabwe, retention of highly skilled workers long term as well as confidence building with this class of employees.

Vluggen, Kuijpers, Semeijn and Gelderman (2020) had a stuck warning regarding Social Return On Investment in public procurement when they said that Trust among parties involved and their representatives was a major driver for SROI development and was not measured well enough, which complicated analysing and reporting its development. An empirical paper done by Wang, Y., Sun, H., Jia, T. and Chen, J. (2021) concluded that buyer-supplier interaction facilitated ambidextrous innovation, namely exploitative innovation and exploratory innovation which in turn enhanced business performance, and finally that competitive intensity strengthened companies while dysfunctional competition weakened them. Zimbabwe was a mixed bag with numerous supply constraints that it faced due to Western sanctions, policy inconsistency and endemic corruption (many top bureaucrats, politicians and government ministers had been jailed). Research by Hassan and Oukil (2021) had the result that attractive systems and their commercial models to be acquired should be low cost, required small space, and had high capacity. This was necessary for management to consider as part of deliberate economic moves to assist operatives in both the public and private sectors do their operations jobs in supply chain with ease.

It would be unfair to take a simplistic approach to these issues as top management in the public procurement entities operate in a wider economy where principles of economics and business applied. Procurement was a business function which had the same overall objectives of achieving company mission, vision and objectives and best serving investors foremost and other stakeholders. Supply chain activities cover everything from product development, sourcing, production, and logistics, as well as the information systems needed to coordinate these activities, (Handfield, 2013). From this explanation it becomes clear that SCM was central to firm efficiency, survival and competitiveness as well as governmental service excellence. Handfield said the concept of supply chain management was based on two core ideas. The first was that practically every product that reached an end user represented the cumulative effort of multiple organizations. These organizations were referred to collectively as the supply chain. The second idea was that while supply chains have existed for a long time, most

organizations had only paid attention to what was happening within their “four walls.” Few businesses understood, much less managed, the entire chain of activities that ultimately delivered products to the final customer. The result was disjointed and often ineffective supply chains. The future of world trade, and the global trading system, will be shaped by a range of economic, political and social factors, including technological innovation, shifts in production and consumption patterns, and demographic change, WTO (2013). The well-informed WTO view was that the future of trade will also be affected by the extent to which politics and policies successfully address issues of growing social concern, such as the availability of jobs and persistent income inequality, as well as environmental concerns. In supply chain management there were many considerations about quality, stock availability, lead times, KPIs, organisational focus, branding, productivity, efficiency, reliability, past history of performance, vagaries of weather to be considered, public holidays in different countries, country of origin effect (positive or negative – Zimbabwe obviously had a very negative country of origin effect because of the toxic politics it has been experiencing since the year 2000 when the land reform exercise was initiated to take back farms/land which had been forcibly taken from black people by colonialists), time zone differences, wars and conflicts in some countries and transit routes, trade agreements, sweat shops, child labour in supply chain, smuggling, duty evasion, customs inspections, hacking, cyber security, duties and tariffs, quotas, licences and permits, language barriers, strikes and conflicts, seasonal issues, culture, religion, time period length away from high pitched national elections, strategic alliances and the need to buy in the group or subsidiary companies, the national mood and localisation issues, corruption and personal interests by some managers, collusion, shortages on the market, cashflow situation, demand fluctuations for your own products, cyclical troughs for the national economy (boom, recession, depression, inflation), availability of foreign currency to import, annual shutdowns of companies and their effect, relocations, support industries, technological developments in the market, new competitors, national crisis and opportunities, pandemics like Covid19, effects of graduate trainees on productivity, staff succession planning, big data issues and artificial intelligence,

societal expectations, green issues and environmental legislation, cybersecurity, fraud, risk management, insurance factors, natural hazards, pollution, trust, confidence, location of suppliers, weekends, religious festivals (key religious holidays, rites and customs) and government orientation. This is not a simplistic job for the faint hearted but now required university degrees, and advanced degrees right up to PhD degrees. The business landscape was now too slippery, risky and dangerous. In dealing with globalization, a logistician needs to be able to integrate, communicate, and analyze from an international perspective, perform financial analysis, maintain good industry and customer relations, exhibit strong people skills, stay healthy, and understand laws and regulations, (Wu, et al, 2013). The authors said industry believed that cross-functional marketing skills were critical and emphasized the importance of risk and financial management. That was the missing dimension for most SCM practitioners, inadequate knowledge and sophistication in marketing management, which was the very purpose of business, serving the customer.

Companies and government ministries that continued to be run by staffers with high school certificate only were a big risk unto themselves and their stakeholders. Modern supply chain departments needed as a minimum someone with a diploma in supply chain and up to degree level for lower level, middle and top-level employees. Anything less than this was an accident in waiting. Sometimes competence in key international foreign languages was necessary too depending on the markets served. As regards hypotheses it is clear from the findings that:

- a. Top management involvement in the implementation of supply chain management helps improve operations. This hypothesis is accepted.
- b. If top management empowers employees to solve supply chain management related problems systems work better. This hypothesis is accepted as well.

CONCLUSIONS AND IMPLICATIONS

The study concludes that the level of support offered by top management in implementation of supply chain management in public procuring entities is very weak. However, it should be the role of management to implement realistic objectives and provide supply chain management related training to their employees, enhance teamwork effort and provide priority and attention to internal and external customers. The support of senior management support would greatly influence the successful implementation of supply chain management practices in public procuring entities. The public procuring entities should consider training employees before introduction of any supply chain management strategy. Moreover, the training should be tailored to meet organisational strategic objectives. These would make the implementation of supply chain strategies successful thereby improving the organizational productivity and customer service. Top managers would also require training sessions on the implementation of supply chain management practices, and these should be done in well calculated stages aimed at providing enough knowledge and skills to all employees. The study finally recommends that there is a need to ensure that the requisite supply chain technological infrastructure is in place especially in outlying areas out of Harare where information technology connectivity is a major challenge. The study proved that top management in public procuring entities should offer support to the procurement staff by offering the necessary resources. This is because all supply chain improvement initiatives would usually fail dismally in the absence of top management commitment.

Throughout this paper it was quite obvious that managers needed to wear two hats, one as professional practisioners, and the other as conscious political players who have no choice but to address political imperatives dictated by the government of the day. It would be unfair to say managers had no vision, mission and good objectives when they spent long periods or months drafting and refining these strategic documents, most times with the technical input of top-level consultants and academics from leading universities, even from outside Zimbabwe and from the developed world. The devil was always in the implementation or details. It is not a secret that

parastatals in Zimbabwe, municipalities/local authorities and government ministries were partly nests for employing relatives and whole clans. How then would managers maintain discipline managing brothers and sisters-in-law and in-laws, African or any other culture being what it is where in-laws were untouchable and there was natural sympathy for family members even when wrong? Management control breaks down. Throughout history the Japanese have been quite vocal about this, raising a red flag. It does not end there but goes further where bosses have their relatives employed or government ministers and top bureaucrats had their family members employed including their harem of mistresses. Some managers and officers who have attempted to rigidly enforce and apply the public procurement code of conduct and procedures have cursed themselves after getting fired or dismissed for doing the right thing. Impunity was quite common in most 3rd world countries where the political class and elites were partly untouchable. It was worse in the public procurement sphere where there were a lot of vested interests by top politicians and bureaucrats across the spectrum and corruption was the order of the day. This was an area which was a corporate minefield and deadly snare for managers and operatives. Berman and Rabin quoting (Søreide, 2002; Kaufman, 2004) proffered that studies showed that public procurement was most prone to corruption, (Berman and Rabin, 2009:20).

It was unfortunate most literature blamed managers in public procurement instead of understanding the toxic environment they operated in. In countries like South Africa public tender awarding had led to shootings and deaths. Where was the freedom to do what is right when you have a gun on your head or unwritten threats of dismissal? In Mexico and Italy one has the mafia as players in the economy. Where would fairness come from? Procurement Committees would always preach adherence to rules and regulations, which is correct, but in practice a lot of political dynamics would be at play. Top management support and commitment mattered but it was more than that which was required for a successful efficient public procurement system. A whole chain of other institutions outside your own company had a lot to do with public procurement spanning many countries of the world.

All said it still remains the ideal situation to have good public procurement systems that deliver value to society, but the existing limitations should be taken into account. Good companies offering best value for money may partly be out of reach due to sanctions imposed on Zimbabwe by the European Union and the United States of America. Managers have no solution in such instances. Those in sanctions free countries may not know this. Nobody should ignore political realities around us as there were consequences for doing that, some quite dire. Covid19 had also resulted in most countries looking more inward and being too protectionist of local businesses. Localisation of jobs has increased in many countries as jobs dwindle and foreigners are given the boot to pave way for locals, which is quite noble for any country naturally. Literature does not have all these issues. This is the gap in knowledge filled by this research as a contribution to knowledge and academia.

Limitations and Avenues for Future Research

The study has assessed the role of top management support in the implementation of public sector supply chain management practices for public procuring entities in Harare, Zimbabwe. The study was purely a cross-sectional survey that relied on data from selected public procuring entities in Harare. A richer understanding of the role of top management support in the implementation of public sector supply chain management practices might be expected if longitudinal data is utilized. A longitudinal research design might present the evidence of causation which could not be achieved through the use of cross-sectional survey designs. Therefore, future studies might consider this research direction.

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Renewable Energy for Sustainable Development: An Assessment of Solar Energy Adoption among SMEs in the City of Accra, Ghana

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Abstract

Energy demand continues to drive sustainable development in all countries of the world. As Ghana is accelerating her transition to a low carbon economy, this paper aims to investigate the nature, opportunities and challenges of the solar energy market in the City of Accra. This paper used a qualitative inquiry approach to investigate the solar energy market development in Accra. The Ghana Government's policy framework for achieving sustainable energy in the country as well as the emerging opportunities and barriers relating to market development of this energy sub-sector in Accra are analysed. The paper found that inadequate institutional and service-provider's financial support, after-sales technical support, limited consumer credit facilities, a dearth of public education and general awareness among the public about solar energy technology remain important barriers to solar energy development in Accra. In addition, the Net Metering policy dissonance constitutes a critical barrier to solar energy transition and market development in the city. In conclusion, government programming and increasing industrial sector participation will provide a vital catalyst for the development of the solar energy sub-sector and market in Accra.

Keywords: Adoption; barriers; renewable energy; solar; sustainable development

INTRODUCTION

Energy is probably one of the most globally discussed development challenges in recent times. A number of studies have suggested a close relationship between energy and sustainable development (Hoogwijk, 2004; International Energy Agency, 2015; World Health Organization, 2016). Although energy has been touted as one of the indispensable drivers of sustainable development, about 1.4 billion people still have no access to it. Twenty two per cent (22%) of this population is living in developing countries and a chunk of this proportion is in Sub-Saharan Africa (SSA) (International Energy Agency, 2015). However, in recent years, the environmental impacts of energy production have become important in the sustainable development discourse (Jianzhong et al., 2018).

The energy sector in SSA is currently facing numerous challenges such as unreliability of supply and insecurity. The region currently has the lowest electricity generation capacity in the world and experiences the most acute forms of energy poverty. Approximately 630 million people live without reliable access to electricity and 790 million people are forced to rely on solid biomass to cook food and heat their homes (Catellano et al., 2015). The unsustainable energy trend will likely exacerbate because of the projected rapid increase in population growth, growing urbanization and expanding economic activities (Sovacool, 2012).

Renewable energy sources such as solar energy continue to play a critical role in the delivery of sustainable and clean energy solutions for the populations of developing countries (Hoogwijk, 2004). Despite the potential of solar energy to contribute significantly to well-being in developing countries, it continues to be constrained by a number of challenges (Sawin, 2004; UNDP, 2004; IEA, 2017). The solar energy sub-sector has not been able to reach its full potential due to barriers in market penetration, growth and development across most economies in the world (Painuly, 2001).

However, the growing and unsustainable exploitation of conventional energy sources such as crude oil, coal, hydro, natural gas, and the accompanying concerns for environmental sustainability in developing countries lend support for the development of solar energy (Dincer, 2000).

Renewable energy sources such as solar holds enormous potential for abating the growing impacts of climate change. A study conducted by Deichmann et al. (2011) argued that solar energy is the best renewable option for Africa, because it is naturally decentralized resource, available in large supply, falling initial costs of solar energy utilities as the technology advances, and its immunity from supply or price volatilities. Sub-Saharan Africa (SSA) is richly endowed with solar energy resources suitable for photovoltaic solar systems and solar thermal facilities; most of the region has average annual Direct Normal Irradiance (DNI) greater than or equal to 5kWh/m²/day, the critical minimum required for an efficient provisioning of power from solar facilities (Boyle, 2004). This reported daily threshold of solar irradiation presents ample opportunity for the development of solar energy infrastructure.

One important megatrend driving energy insecurity across SSA is the region's changing demographics, as well as the region's vulnerability to climate change (Cervigni *et al.*, 2015). In many parts of the region, several pockets of urban populations continue to remain underserved by inefficient and unreliable power systems (Deichmann et al., 2011). This problem of widespread urban energy and power underservice remains a major challenge for SSA countries like Ghana. One striking feature of the changing demographics is the region's current explosive and rapid pace of urbanization (UN, 2014). In the last few decades, Africa has experienced an incredibly fast pace of urbanization (Jiang and O'Neill, 2017). Reports estimate that the continent's current 1.1 billion people will double by 2050—and more than 80 % of that increase will occur in cities (Muggah and Kilcullen, 2016). This presents a dire need for a sustainable for energy infrastructure.

Unfortunately, the slow pace of diffusion of solar energy technologies is widespread across many parts of SSA despite the prevailing market opportunity, characterized by urbanization and population growth. Moreover, renewable energy development presents a critical frontier for climate action. But the adoption of market-based solutions to the climate change challenge remains a largely untapped research frontier. According to Ndzibah (2010), Ghanaians consider solar as the most viable energy alternative. However, one of the underlying reasons for the slow-paced development of solar

energy is its capital-intensive nature; most costs are incurred upfront, unlike non-renewable sources where costs are spread over time, although operational costs are low (Larbodenna *et al.*, 2017). Despite remarkable promotion and commitment from various nations, only a small percentage of energy is generated from renewable energy such as solar, especially in developing countries. This scenario is because of the numerous barriers that control the diffusion of renewable energy. These barriers prevent renewable energy from effectively competing with traditional energy and hamper achievement of the necessary large-scale deployment (Nasirov *et al.*, 2015).

In Ghana, there is a strong case for developing a robust market for the solar energy industry. For example, over the past two decades, the electricity sector in the country has experienced several challenges, including inadequate supply of power as a result of low inflows into the reservoirs of the Akosombo Hydroelectric Dam and inadequate alternative generation capacity (Ghana Energy Commission, 2004). More recently, the country's energy supply experienced severe crises leading to load shedding and cyclic power outages with disproportionate impacts on urban centres such as Accra, Kumasi, and Tema (Kumi, 2017). These recurrent energy supply crises have negatively impacted economic growth in the country. Available economic data show that electricity supply crises pose the second most important constraint to business development in Ghana. The country lost about 1.8 percent of its Gross Domestic Product (GDP) during the 2007 power crisis (World Bank, 2011).

Okoye *et al.* (2016) observed that solar energy is economically and technically viable in three major cities in Nigeria and recommend research to generate relevant data to understand solar energy markets in urban hubs of the country. However, in the context of Ghana, much of the research underpinning the solar energy industry is largely focused on rural development—with scant research output on solar energy development in urban areas. Renewable energy is key to the development of Ghana's power sector especially for the replacement of fossil fuels, which have become much a talk globally for contributing to climate change. Unfortunately, Ghana has seen little development and deployment in the renewable energy sector mainly due to the

numerous challenges/obstacles hindering the growth of the sector. According to Ghana's Renewable Energy Master Plan, although the Government of Ghana has demonstrated strong policy commitments towards the development and promotion of renewable energy, investment in the renewable energy sector has been limited due to various factors including the challenging investment climate, limited technological capacity, insufficient experience in renewable energy development and human and socio-cultural challenges. There still remains an insufficient adoption of solar energy infrastructure in urban areas, where the majority of Ghana's population resides (Energy Commission, 2018). Obeng-Darko (2018) revealed that the key bottleneck that is hindering Ghana from achieving its sustainable energy target critically revolves around policy, legal and regulatory dimensions of the market. Since Ghana has adopted a low carbon development approach, this paper analyses the solar energy regulatory framework, opportunities for private sector and barriers underlying the solar energy market development in the country.

ENERGY AND SUSTAINABLE DEVELOPMENT NEXUS

Globally, energy demand and its associated services continue to drive social and economic development, and ultimately improve human development and wellbeing (Edenhofer *et al.*, 2011). Energy services is a critical facet of every country on which other development aspirations hinges. Lipton and Ravalion (1995) suggest a close relationship between paucity of energy services and indicators of poverty, including illiteracy, life expectancy, and infant mortality, among others (World Health Organization, 2016). Harnessing the potential of the Earth's solar energy for electricity generation is not only pivotal to poverty alleviation and economic development but a smart and cost-effective alternative for climate mitigation and a low-carbon future economy (Creutzig *et al.*, 2017). Solar energy provides people disconnected from the global economy and without access to power grids the opportunity to light their homes and businesses in places where grid power can either be extremely expensive or unreliable (International Trade Forum [ITF], 2011). The Global Green Growth Institute (GGGI) reveals that urban

infrastructure is one of the most critical pathways/sectors in reducing global GHGs emissions. The reason is that they account for about a third of the world's energy use. This reinforces the need to understand solar energy markets in cities.

Urbanization and Ghana's Energy

Realities

Since Independence in 1957, Ghana's electricity supply has been driven primarily by the country's hitherto abundant hydropower resources (Gyamfi, Modjinou, and Djordjevic, 2015). Currently, the UN estimates that Ghana's total population is about 30 million, of which about 54 % is urban (UN World Population Prospects, 2017). This rapid growth of the population has significantly affected the ability of the country's hydro-resources to meet the growing energy demands of the country. A review by Miesher (2017) reveals that in recent times, nearly three decades after the inauguration of the Akosombo Dam, the facility struggles to supply less than 50 % of the nation's power needs. This is perhaps underpinned by the colossal increase in urban population and the concomitant industrialization processes in the country. Over the last decade, Ghana has continually experienced several power infrastructure failures, including incessant repetitive power outages in 1983, 1998, 2006/2007, and most recently during 2015/2016 (Eshun and Amoko-Tuffour, 2017). These outages occurred despite the fact the installed electricity generation capacity has more than doubled within the last decade (Kumi, 2017). Unfortunately, much of the installed power generation capacity has been contingent on external foreign investment in fossil fuel-based infrastructure, at the expense of harnessing the existing renewable resources, including solar energy which has a huge potential in the country (Energy Commission, 2018).

Business Opportunities for Solar Energy Development in Ghana

Solar energy is one of the most important renewable energy options for Africa because the primary resource (solar irradiation) is naturally

decentralized, available in colossal supply, increasingly dwindling costs of the technology, insulation from international price uncertainties and its qualification to receive significant funding support from multilateral agencies (Deichmann *et al.*, 2011). Therefore, developing, harnessing, and utilizing this resource present a critical business opportunity which can boost productivity in several sectors of the Ghanaian economy and contribute significantly to reducing the fuel import deficits of the country (Mensah, Boahen, and Amoabeng, 2017). The energy sector presents investment opportunities for private sector firms in Ghana especially solar energy. A study by Ahenkan (2020) identified investment opportunities in the renewable energy sector in Ghana.

Barriers to Solar Energy Development

Over the years, the global renewable energy sector (including in Ghana) continues to be inundated with numerous challenges, including costs and the general lack of awareness of the importance of renewable technologies like solar (Kochtcheeva, 2016). Some of these barriers have implications on social acceptability and cultural integration of these technologies in some places, especially in developing countries such as Ghana. The human dimensions of these technologies have continually come under public scrutiny. Literature indicates that progressive societal choices to leapfrog traditional energy sources to alternative energy sources have depended on the availability of land resources (Pimentel *et al.*, 1994). This competition for resources between land and energy has introduced a new form of conflict that borders on the use of land for energy production or food production (Wolfenson, 2013; Graeub *et al.*, 2016).

A couple of studies (Blechinger & Richter, 2014; Ahiekpor, 2013; Energy Commission, 2017; Mahama, Derkyi, & Nwabue, 2021) have shown that, the most challenging obstacles facing the solar energy development in developing countries include; startup capital, high interest rate, lack of incentives, inadequate access to finance and long-term capital, grid connection constraints and lack of grid capacity, instability of the local currency (currency fluctuations), insufficient technical know-how for the operation and maintenance of renewable energy technologies. Goldsmith (2015) has noted that the transition from conventional resources to renewable energy has encountered

public resistance and opposition. This is due to a lack of awareness of the benefits of renewable energy, disruption of seascape, and acquisition of land which could have been used for agriculture, tourism, etc. According to Ansari, Kharb, Luthra, Shimmi, Chatterji S (2016), the lack of experienced professionals is affecting renewable energy development in developing countries. The Government of Ghana has demonstrated strong policy commitments towards the development and promotion of renewable energy. However, investment in the renewable energy sector has been limited due to the challenging investment climate; uncertainty of available resources; limited technological capacity; insufficient experience in renewable energy development; human and socio-cultural challenges; and information and awareness barriers.

Solar Energy Regulatory Framework of Ghana

Renewable Energy is central to the achievement of both the 2030 Agenda for Sustainable Development and the Paris Agreement on climate change. Several countries around the world are searching for sustainable and renewable alternatives to their energy supply due to factors such as the increasing demand for energy, the decline in fossil fuel reserves, CO₂ reduction and global climate change (Abanda 2012). Government of Ghana has identified renewable energy as one of the options that could contribute to the overall energy supply mix and minimise the adverse effects of energy production on the environment within the framework of the country's low carbon development pathway. The country has a huge potential for renewable energy which remains underexploited. To convert these renewable potentials into actual energy, the government in 2006 set a target of achieving 10 per cent in the energy mix by 2020 through the Renewable Energy Act (832) as main regulatory framework for solar development in Ghana. The Renewable Energy Act (832) was formulated to create an enabling regulatory environment to attract private sector involvement in the development, management and utilisation of renewable energy in an efficient and environmentally sustainable manner, with Energy Commission as the regulator.

METHODOLOGY

The study was conducted in the City of Accra. Accra is the capital and the largest city in Ghana, covering an area of about 225.67 km² (87.13 sq. miles) and an estimated population of 2.4 million, with about 56 % being below age 24 (UN, 2018). The city is the economic hub of the country and hosts several manufacturing firms, oil companies, financial institutions, telecommunications companies, tourist sites, educational institutions, health institutions, and other important establishments (Ghana Statistical Service, 2010). A mixed research approach comprising literature review, interview and consultations with experts of the energy landscape in Ghana guided the preparation of this paper. The first phase of the investigation involved a review of literature on solar energy development in Ghana and some jurisdictions of Africa. Relevant national policy documents related to renewable energy and sustainable development were reviewed. The aim was to identify knowledge gaps and understand concepts and their linkages with sustainable development. Secondly, key-informant interviews were conducted with solar energy companies, policy-makers and relevant state agencies to collect their views on government renewable energy policies and solar energy investment opportunities in the country.

Key informant interviews were also conducted with top-level management of licensed solar energy companies in Accra. According to Energy Commission of Ghana, over 100 licensed solar energy firms are currently operating in Accra. A total of 11 solar energy companies were purposively sampled based on license-holding to participate in the study. These companies deal in the importation, installation and maintenance of solar energy equipment. Two key informants were purposively sampled from the Licensing and Enforcement Directorate of the Renewable Energy Promotion Unit, and Policy and Strategy Directorate of the Energy Commission. The key informants' interviews allowed for the collection of detailed information on the solar energy market. The concept of saturation (Sandelowski, 1995) was used to determine the market saturation point with regards to the recruited solar energy companies. Data saturation is reached when there is enough

information to replicate the study when the ability to obtain additional new information has been attained, and when further coding is no longer feasible. The study operationalized the concept of saturation by concurrently conducting qualitative analysis of interview transcripts during the data collection phase. This allowed the researchers to progressively monitor the key themes that emerged across the samples until it became apparent the issues perpetual. In the case of recruitment of participating solar energy companies, key informant interviews were transcribed and analyzed soon after every interview session as described. The transcripts showed recurring themes before the “10 companies” mark was attained.

The data was analysed using qualitative techniques. The interviews were processed by transcribing audio recordings into words (verbatim) and subjecting the information to thematic content analysis. Common patterns and themes were generated and presented according to the objectives of the study (Yin, 2003; Miles & Huberman, 1994; Ellram, 1996). Bryman and Bell (2011) describe two data analysis methods for qualitative data which include condensation and categorization. Firstly, condensation implies that the researcher reduces long statements into shorter ones. Categorization implies that long statements transferred into categories (Bryman and Bell, 2011). For the analysis, the statements from each respondent were categorized on the basis of two key factors. The next step was reducing long statements into shorter and clearer statements and exploring the differences and similarities. Nuanced qualitative themes obtained from the interviews on enforcement of the solar energy regulatory framework and key themes that emerged from the content analysis were compared to the qualitative themes obtained from the key informants from the solar energy companies that participated in the study (Miles and Huberman, 1994).

RESULTS AND DISCUSSION

This section of the paper presents the data analysis and discussion of the results relating to solar energy opportunities and barriers and the regulatory framework for energy development in Ghana.

Opportunities for Developing Solar Energy in Accra

Government Policies

Policies such as tariff exemptions for solar panels, renewable energy purchase obligations enshrined in the Renewable Energy Act 2011, are among Ghana Government’s strategy to accelerate solar energy development in the country. Interviews conducted indicated that some of these government-driven programmes are effective and provide a recipe for the growth of the solar energy market. According to some of the solar energy companies, government has somewhat helped the market through implementation of some of its policies. A key informant from a dual-operation solar energy firm commented on the National Rooftop Solar Programme—a Government of Ghana’s solar panel-subsidized programme that was piloted in major cities including Accra to promote nationwide adoption of rooftop solar energy—as follows:

Obviously, we had more clients when the Energy Commission introduced this Rooftop Programme. We were part of the national rooftop programme. We had more clients in Accra in the residential areas when the national rooftop programme started. It is effective...We are in Accra. So, when the programme started we actually got more residential users to sign up. What the Energy Commission did was when you qualify, they give you the panels, but you need to meet some requirements which include the Balance of Systems. This programme actually worked for us because we had more people coming to us. (Key Informant Interview, SIMC/SIC)

Well-established indigenous solar energy firms dealing in the importation as well as installation and maintenance of solar energy equipment recognize that government has made significant efforts to promote the development of the sub-sector. For example, the government provides incentives for the importation of solar energy equipment. The incentives include the expansion of tax breaks for only solar panels but excludes batteries and other essential accessories of the technology to make

solar more affordable. For example, one Key informant interviewee revealed the following:

There is a tax exemption good but that is for the panels but not the batteries. They classify the batteries as normal car batteries. The batteries too are very expensive. Definitely, if the taxes on the batteries are high the end-user will get higher prices for the batteries. Yeah, it is good they have exempted the panels, but they can do more and that is the only way that will make people not really rely on the national grid to meet their energy needs. If we get these things right, a lot of people will go for solar. (Key Informant Interview, SIC/SIMC)

Numerous opportunities for solar energy market development and strategic action by the

government are perceived by many stakeholders to be limited to the industrial sector. The existing opportunities within both government and industrial sectors are summarized in Figure 1. According to Eshun and Amoako-Tuffour (2016), the fast-pace of growth of Ghanaian cities is a driver of the exponential growth of both the industrial and domestic demand for electricity. Gboney (2009) observed that Government policies and programmes have been a recipe for solar energy transition in Accra. For example, the National Rooftop Solar Programme provided a huge market for solar energy service providers during its implementation in Accra. However, the non-exempt of taxes for batteries and other essential accessories for solar energy provide an opportunity for government policy intervention.

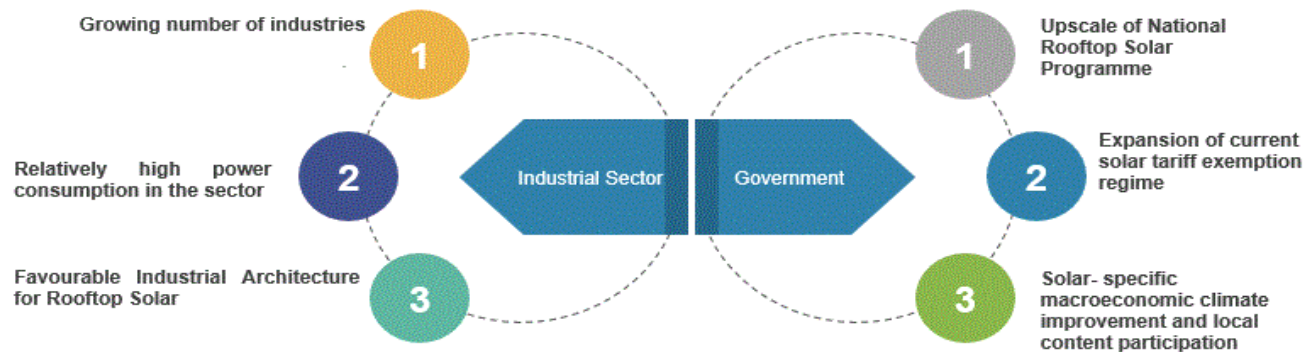


Figure 1: Service Providers' Perspectives on the Dichotomy of Solar Market Opportunities,

Solar Energy Market Entry Barriers

Market entry processes in relation to solar energy include all activities that companies undertake to enable them to provide solar energy equipment and services to their target markets. From the Key informant interviews with top-level management (including managing directors, chief operating officers, engineers, procurement officers, marketing executives, renewable energy executives)

of the surveyed solar energy companies revealed the existence of unfavourable market entry conditions.

Key issues relating to market entry by solar energy service providers identified in this paper include threats from unlicensed new entrants; inadequate level of public awareness of solar technology; sophisticated licensing requirements; lack of credit support for consumers, among others. The most problematic market entry barriers are presented in Figure 2. Hasnain et al. (1998) argued that much

attention should be focused on public awareness, including networks around the world, to accelerate the dissemination of solar energy technology across societies. This aligns with the finding of this paper regarding the low-level of public awareness about market entry barriers being experienced by solar energy service providers in Accra. The findings reveal that a critical mass of households within the city of Accra lack vital knowledge about solar technology and how it can be integrated with traditional power systems provided by the national

grid for cost-cutting and sustainability. One foreign Company described the problem of lack of knowledge among consumers in the market entry process:

Entering the market is a challenge because the knowledge of solar energy has not settled well with most people in Accra. It also takes longtime for clients to pay companies. (Key Informant Interview, SIC/SIMC)

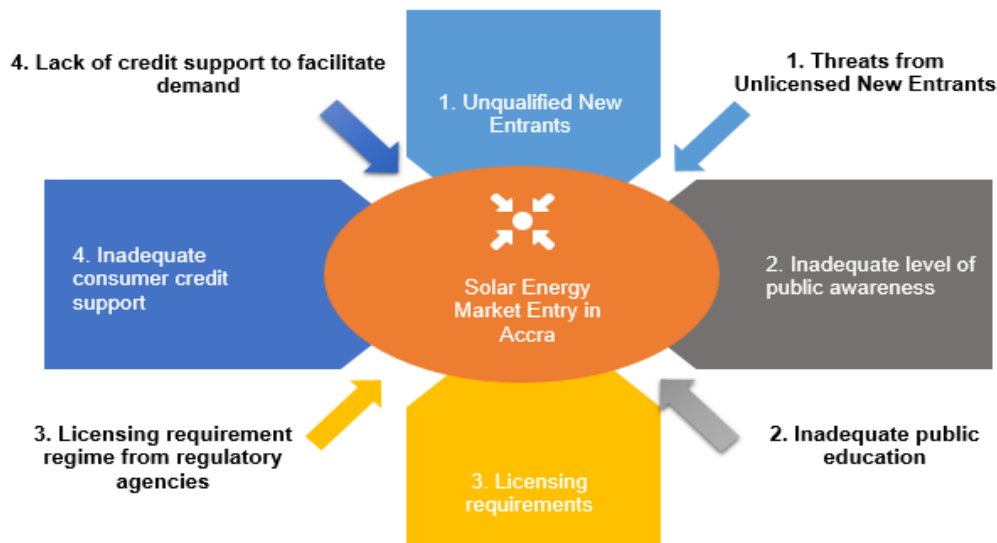


Figure 2: Thematic Issues Underlying Solar Energy Market Entry within Accra,

Source: Researchers' Construction

Inadequate Credit Facilities and High Interest Rates in Ghana

The prevailing unfavorable macroeconomic climate including high-interest rates in Ghana presents a severe bottleneck to solar energy market development in Accra. This challenge exists in many economies as is attested to by Apeaning and Tholander (2013) and Keeley and Matsumoto (2018). Gboney (2009) and Amankwah-Amoah and Sarpong (2016) identified inadequate credit facilities to support consumer transition to solar energy and poor credit ratings among banks in Ghana are fundamental barriers to the development of renewable energy in the country. Lack of credit for renewable energy development is also highlighted by Zaglago et al. (2013). For example, a key informant interviewee from a

startup solar energy firm licensed for solar importation, installation and maintenance of solar equipment revealed the following:

As I told you we are a startup. Yes, so the biggest challenge for us is because there is no financing available. You cannot invest in a product without putting money on the table. And the financing is not very effective in Ghana because the interest rates are too high. You know you go to the bank and they ask for a 30 % interest rate. In Ghana the interest rate is 25-30%. I mean this is very ridiculous. You cannot borrow money with such conditions. (Key Informant Interview).

Net Metering

The current state of the Net Metering regime is a bottleneck that is affecting the growth of the solar energy market in Accra. Net Metering is a billing technology that allows users of non-readily available renewable energy sources, where renewable energy source is not used as a backup, to be credited for the power they contribute to a grid owned by a power distributor. In Ghana, the Net Metering Code (NMC) was developed by the Energy Commission in 2015 in accordance with the object of the Ghana Renewable Energy Act 2011 (Act 832)—to promote the development, management, utilization, sustainability and adequate supply of renewable energy (including solar energy) for the generation of power for varied purposes— for connecting renewable energy to distribution and transmission systems to allow for effective operations. The results of the interviews reveal that 91 % (i.e. 10) of the companies that participated in this study (*including companies operating only as solar equipment installation and maintenance firms, and companies operating both as solar importers as well as solar installation and maintenance firms*) have bad experiences with the current Net Metering regime, especially among the residential segment of the solar energy market in Accra due to conflict of terms of solar companies, the power distribution companies, and the regulator. An interviewee from SESP revealed the following:

Okay with the regulatory but one challenge we face with ECG or PDS is that they regulated when we get a net meter. People get net meters to enable them to export the excess electricity they produce to ECG now PDS and they are credited when they are exhaust or consume more. This is the sole idea that made people to really want to get solar. It was very encouraging when this regulation came into effect. It is therefore unfortunate that the regulation has been put on hold. Though you find someone who is interested, then he or she gets to know that this regulation is not being implemented is therefore pushed back. But PDS or ECG has not given concrete information or response to this issue. It is a bit of a challenge convincing someone who has much interest to produce her / his own energy and export

to PDS and take back but can't have a meter... This slowed things for us but initially when this thing came, we had installed systems for clients who had the chance to get hold of this meter. And they enjoyed it. We have some who have applied for these meters and still their applications are pending and you can't tell them that they are getting the meters...People who are even having this net meter are no longer enjoying it as they are supposed to. (Key Informant Interview, SIMC/SIC)

A key finding of this paper is that the current status of Net Metering regime is one of the most significant barriers in the development of the solar energy market in Accra. The lack of agreement of terms on the implementation of the policy among stakeholders of the power and electricity market is the core of the problem. Ackah *et al.* (2014) observed that Net Metering is one of the critical policy measures that can help to reform the electricity sector in Ghana. However, the current state of this regulatory regime presents a bottleneck to the solar market development in Accra.

Technical Barriers to Solar Energy Market Development

Technical barriers to solar energy market development include inadequate skilled personnel, the proliferation of sub-standard products and services into the market, inadequate housing codes and urban planning and after-sales service. The findings of this paper are supported by Attachie and Amuzuvi (2013) who found that technical barriers significantly hinder the development of the renewable energy sector in Ghana. Generally, after-sales service is largely unavailable in the solar installation and maintenance market. In-depth interviews revealed the lackadaisical attitude of manufacturers to provide after-sales support to solar energy equipment importers and installation and maintenance companies. One of the participants of the interviews lamented thus:

After sales is a challenge. It is an issue with the manufacturers. We have difficulty with after sales service because manufacturers don't give us spare parts. You need to have technical backup because anything can happen. You need to have access to spare

parts to be able to offer after sales service. Getting the motherboard and all that. Sometimes it is a bit difficult to get that from the manufacturers after you have bought the items so it becomes difficult for you to do your after-sales service very effectively. (Key Informant Interview, SIC/SIMC)

Regulatory Framework for Solar Energy Market in Ghana

The Energy Commission of Ghana is the primary agency responsible for the enforcement of the Law bordering the renewable energy sector (including solar) in collaboration with other government institutions, ministries, and agencies as the Law holds provision for collaborative enforcement under sections 7 (1) and 7 (2) of the Renewable Energy Act 2011 (Act 832). Sections 8 to 18 inclusive holds detailed provisions for licensing for renewable energy including solar energy in Ghana. Section 8(1) of the Act outlines that a person shall not engage in any commercial activity in the

renewable energy line except with a License issued under the Act. Thus, without a license a solar energy company cannot operate legally in the industry. Sub-sections 8(2)(e) and 8(2)(g) identifies the service provider market segments in the solar energy industry which compulsorily require a license for operation—importation, and installation and maintenance respectively. Given these provisions, two licensing manuals and application forms were developed by the Energy Commission in September 2012 to cater for licensing in Solar Importation as well as Installation and Maintenance with a provision for renewals annually. The Energy Commission is primarily responsible for the enforcement of the Law on the renewable energy sector (including solar). The Energy Commission enforces the licensing regime through collaboration with other national agencies and institutions in areas such standards and conformity assessment, environmental impact assessment, spatial planning, tariff setting, public participation as is provided in Section 7(2) of Act and summarized in Figure 3 below.

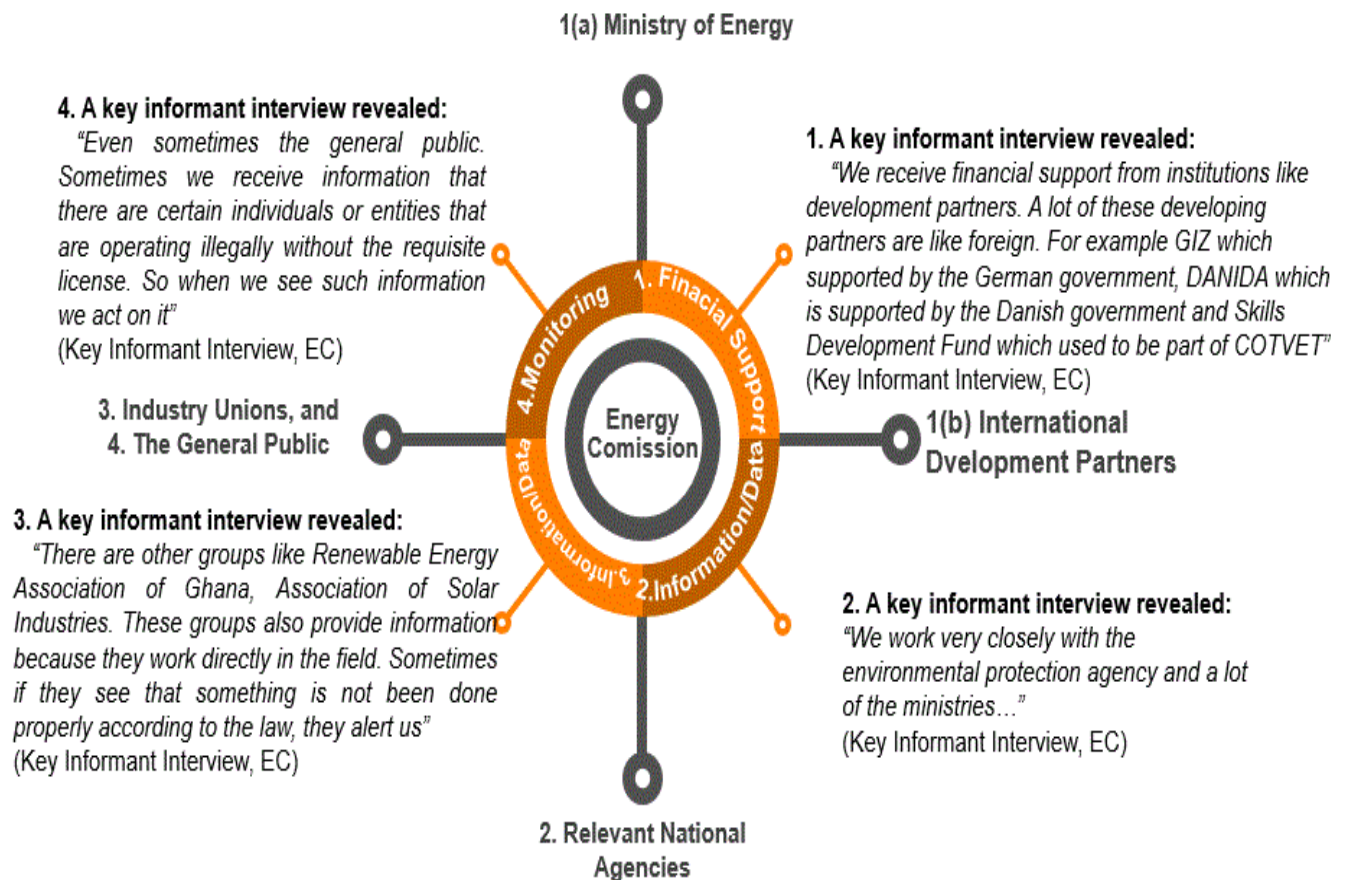


Figure 3: Role of External Actors in the Enforcement of the Solar Energy Regulatory Regime

Evolution and Current Limitations of the Solar Energy Regulatory Regime

While the Ghana Renewable Energy Act 2011 (Act 832) has not been amended since 2012, the regulatory framework for the solar energy market has undergone some modifications to keep up with the demands of the market. The most conspicuous of these changes is the current non-applicability of Renewable Energy Tariff Rates which has been specified in Sections 27, 28, and 29 of the Act because of increased competitiveness of the market. A key informant from the Policy and Strategy Directorate of the Energy Commission during the in-depth interviews revealed the following:

In the case of Feed-in Tariffs, there are now a lot of interested bidders in the solar energy sector because the price of solar

energy systems are going down. Even though in principle more solar systems should be used, it is not the case because the market situation is not favourable. For example, if the government says 20 cents per unit, someone who is bringing solar systems has to be paid 20 cents. Now the price has gone down and someone says as for me I am even prepared to bring in solar for 10 cents even though the Feed-in Tariff says 20 cents. And another person comes and says instead of 10, I will bring it in for 8 cents. So the competition sets in. So what the Energy Commission says is okay then allow it on merits. (Key Informant Interview, Energy Commission)

Similarly, regarding the enforcement of the licensing regime, the experiences of key informants indicate that the solar energy market in Accra has

expanded beyond the scope of the current licensing regime. Emerging fledgling markets for solar energy are not adequately captured by the current licensing regime. As a result, the Energy Commission is reviewing the current licensing regime to take into account these nascent markets. A key informant interviewee pointed out the limitations of the current licensing regime:

We have a document which is a license manual for service providers in the renewable energy industry. That entire document has not changed. If you look at it, you will still see 2012 but we are reviewing it. By the end of the year, there will be a new one. Basically, that one will say 2019. We are doing these because you know there are new markets that are opening up and the current licensing manuals do not have frameworks for these markets, so we developed frameworks for these markets. For example, marketing and assembly of renewable energy technologies. The first one did not have a licensing framework for marketing and assembly but now companies that are interested to go into marketing and assembly, a regulatory framework has been developed for that. (Key Informant Interview, Energy Commission)

Challenges in the Enforcement of the Solar Energy Regulatory Regime

The enforcement of the regulatory framework for solar energy development in Accra is replete with several challenges which include poor monitoring and information systems, inadequate human and institutional capacity, insufficient finance, and ineffective implementation of the Net Metering policy. An in-depth interview with a key informant in charge of Enforcement and Supervision at the EC remarked thus:

For companies within Accra, their major challenge is getting the correct data. When licenses expire, companies are supposed to submit data when they apply for renewable of their licenses. But it is sometimes very difficult to get the data on the solar energy systems they have installed because they don't collect the data. You know, as a licensed company you are allowed to

operate for only one year and in that one year you can do as many installations as possible. So what happens is that at the end of the year when you are applying for renewable of your license, you are supposed to submit data on all the installations that you have done. So what actually happens is that if you don't happen to apply for a renewal or we don't come across solar systems you have installed, it can actually take 1, 2, 3 years without us knowing the systems you have installed. (Key Informant Interview, Energy Commission)

Another in-depth interviewee from the Policy and Strategy Directorate of the Energy Commission indicated that critical institutions and support schemes for promoting solar energy in the country have still not been put in place. This challenge hindering enforcement of the solar energy regulatory framework is attributed to financing. Below is the key informant's view:

If you look at the Ghana Renewable Energy Act, it talks about the establishment of a renewable energy authority. It also talks about the establishment of the renewable energy fund. Even though the fund has been established, the amount in it is not enough to take us anywhere. So the establishment of the authority is still incomplete and a sufficient operational renewable energy fund is yet to be. (Key Informant Interviews, Energy Commission)

This challenge is corroborated by extant literatures that point to institutional financing as an important building block for solar energy market development.

Clearly, the current state of the solar energy market in Accra and, to large extent, across the country is due to the dearth of an independent autonomous institution to effectively ensure the promotion and development of the industry. This institutional challenge is linked to inadequate funding. This is because the largesse in the renewable energy fund is limited. Perhaps, the most important challenge service providers in the solar installation and maintenance market are facing is the implementation of the Net Metering policy. A key

informant from the Policy and Strategy Directorate remarked:

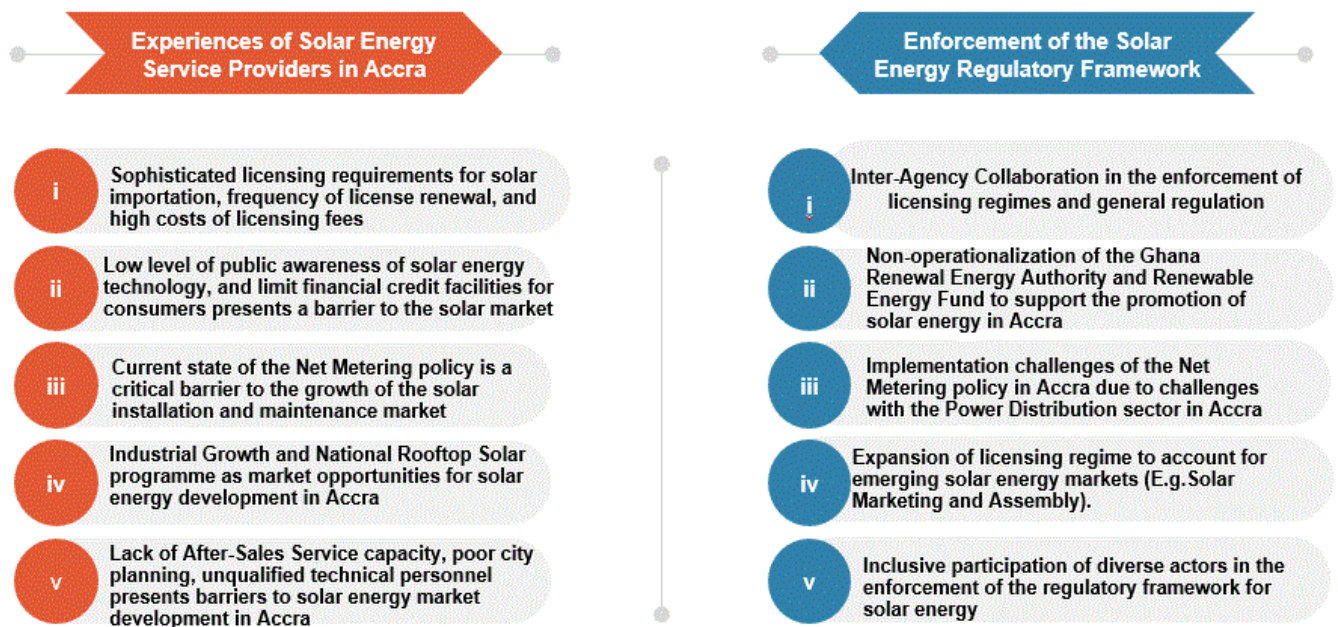
Implementation of Net Metering will mean if a person is using a renewable system and at some period is not using the energy, any amount that comes from the renewable energy system including solar is credited to him on the grid. And as we all know, ECG now PDS is the main regulator of the grid. So, anything that affects their balance sheets they will be reluctant to take the required. If you bring in a system that will not increase PDS's customer base but rather cause them a shortfall, they will not be eager to reimburse you credit and so and so cost. So, engagement with ECG is quite a challenge...

Relationship between Service Providers and the Solar Energy Regulatory Framework

This section of the paper compares the experiences of service providers in Accra to key issues that

underpin the enforcement/implementation of the solar energy market regulatory framework. A cross-case analysis showed that some issues align while others misalign as is shown in Table 4.2. Issues that align include the Industrial Growth and National Rooftop Solar Programme being implemented by the EC and perceived as opportunities by the SESP's within Accra. Secondly, financing is one critical bottleneck intersecting both the SESP's and the regulator in the enforcement and full operationalization of the Renewable Energy Act 2011 (Act 832). The most important barrier to the SESP's is the Net Metering Policy which still faces implementation challenges primarily due to conflict of terms with power distributors. Situating this revelation in previous studies, Atuguba and Tuokuu (2020) also contend that ambiguous regulatory framework, inconsistent policies, implementation challenges and lack of robust coordination hamper the country's efforts towards a clean renewable energy future. This gap reinforces the need for intentional policy development for a successful promotion of renewable energy development in other jurisdictions (Emodi and Ebele, 2016).

Table 1: Comparison between SESP's Experiences and the Solar Energy Regulatory Regime



CONCLUSION AND RECOMMENDATIONS

The paper concludes that government programming, through consumer and business subsidies of solar technology accessories, and education, as well as growing industrial sector participation provide a catalyst for the development of the solar energy market. However, the Net Metering policy dissonance presents a critical barrier to solar energy transition and market development in the City of Accra. Inadequate institutional and service-provider's financial support, lack of after-sales technical support, limited consumer credit facilities, public education and the dearth of general awareness among the public about solar energy technology remain important barriers to the development of the industry. The implementation of the Net Metering policy should consider a broader stakeholder consultation including strong participation by solar energy service providers to develop a win-win Net Metering regime strategy to break down the legal and technical barriers constraining the policy's implementation process. The paper therefore recommends that future studies should examine ways and means of effectively implementing the Net Metering policy to assure a win-win situation for all stakeholders of the energy market in Ghana.

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The Role of Supply Chain Control in Organizational Performance of Commercial Banks

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Abstract

Few studies have empirically investigated the performance improvement of supply chain control and organizational performance of commercial banks in a non - western context with specific reference to the banking industry. This study closes this gap by empirically exploring the relationship between supply chain control and organizational performance of commercial banks. To achieve this purpose, three hypotheses were developed as a guide to review related literature. The population of this study consists of registered commercial banks in Nigeria and data for the study were collected using questionnaire. Five Hundred and Forty Six (546) copies of the questionnaire were distributed to management staff of commercial banks in Nigeria. The study adopted inferential /descriptive statistical techniques and OLS estimated technique correlation. The findings from the study revealed that supply chain control has a positive significant relationship with organizational performance of commercial banks. Based on the above findings, we recommended that managers should evaluate and regulate organizational activities so as to bring performance in line with expectations.

Key words: supply chain, control, commercial banks, organizational performance

INTRODUCTION

Banks in the face of increase competition are currently facing enormous challenges in term of fraud control, customer satisfaction and how to increase their profit margin which have made survival increasingly difficult. Ugwoke (2010) noted that the role of supply chain control for the successful survival of commercial banks is extremely important that modern commercial banks need to go with a new supply chain control management order which will help in fraud prevention, increased profit margin, offer the customer satisfaction and make better organizational performance. It is evident that today, customers have increasingly become so enlightened and aware of their importance that ignoring them in search for competitive advantage can be suicidal for banks.

Most commercial banks encounter some problems in the establishment and implementation of fraud control and prevention systems which emanate from poor infrastructure, lack of finance, unskilled manpower and complexity of operation Ojuri (2007) as cited in Ugwoke (2010). Hayes (2019) opined that banks encounter the problems of low profit margin, increased fraud activities, high cost of acquisition and maintenance of systems. Akpan (2015) also submitted that commercial banks suffered from the problems of complex program application, network and power disruption, and shortage of skilled personnel to operate the complex system. Indeed, studies have attributed these problems to the none –adoption and implementation of appropriate supply chain control mechanism (SCCMs) by bank managers (Fritsch, 2015, Hayes, 2019, Amue and Ozuru, 2014). While (Ambe, 2012, Ebrahim and Mahmoud, 2014) has suggested that organizations may build and sustain strategic competitive advantage by adopting sound supply chain control mechanism (SCCMs), no empirical research exist to show how it may enhance performance improvement of commercial banks in a non –western context. This study therefore sought to close this gap.

LITERATURE REVIEW

The review of related literature is inevitable for any study in order to create ideas pertinent to the problem formulated. Literature review is seen throughout diverse academic sphere which enable the researchers to choose different approaches to help them effectively and

efficiently organize their work. The review of literature in this study will actually centre

on three major areas, conceptual review, theoretical review and empirical review.

Conceptual Review

The Concept of Supply Chain Control

The successful management of supply operations to maximize customer value and achieve a sustainable competitive advantage is known as supply chain control. It reflects a deliberate effort by supply chain companies to effectively and efficiently organize and harmonize all supply chain operations in the interest of supply chain actors. In the view of (Akpan, 2015) Supply chain excellence does not happen by accident as firms with outstanding supply chains control mechanism have made it a part of their strategy which they understand that for a firm to be a business leader in supply chain management, the must be a good control system to give feedback on part-time performance activities within the chain. According to (Akpan, 2015) Supply chain control will help to reduce conflict and enhances corporation among members thereby reducing fraud and increased profit margin of organization. Akpan (2015) argued that Supply chain control help to break the cycle of inefficiency that limits profits growth and return in investment. Also noting that companies that view themselves as dynamic and global see control system to be an effective and efficient mechanism for coordination and management of supply chain.

According to (Inyang, 2004, Etuk, 2008) controlling means the evaluation of the work accomplished against plans or standards to determine if it is being carried out as planned, making adjustments or corrections when necessary should new developments or unforeseen circumstance require it so that the objective or goal is achieved in the most efficient manner. Controlling also involves measuring, retaining, and correcting performance to accomplish an objective as was planned. An organization and its suppliers are interdependent and mutually beneficial relationship enhances the ability of both parties to create value (Kachru, 2010).

Fritsch (2015) argued that Supply chain control will guarantee cost and process transparency,

holistic and continual monitoring of all partners involved in the supply chain network. Hayes (2019) submitted that Supply chain control is based on a coordinated target system (delivery service, costs and assets), an integrated infrastructure and a consistent performance indicator system for measuring process performance and achievement of organizational goals and objectives.

While (Amue and Ozuru 2014) noted that Supply chain control allows supply chain managers to identify organizational faults and fractures along the value chain at an early stage which add value to products or services by constant monitoring of partners performance considering the value chain, the structure of the supply chain in term of production, logistics strategy and conditions on the sales and procurement markets. They further argued that supply chain control also take into consideration the service level (reliability delivery), which measure compliance with the agreed requirements for delivery and makes a significant contribution to customers satisfaction, prevention of fraud and increased profit margin of supply chain actors based on the scope of supply chain management.

Concept of Organizational performance

According to Shafique-ur et al (2019) organizational performance is a vital indicator of any organization success or failure in the market. Organization performance is measured in term of both quantitative as well as qualitative term, and it is achieved by the efforts of individual employee and departments (Zehire et al, 2016) as cited by Shafique-ur et al (2019). The success of an organization is based on their performance that is how well an organization achieves its objectives (Raneree and Al. Youha, 2019). Organizational performance means the effectiveness of an organization in the environment of their desired goals. Meanwhile, organizational performance is a factor that measures how well an organization attains its desire goals. Organizational performance plays a vital role in the existence of any kind of organizations such as profit-making organizations and non-profit making organizations. (Abu-Jarad et al, 2010) as cited by Shafiques-ur et al (2017). The dimensions of organizational performance used in this study are; fraud prevention, customer's satisfaction and increase profit margin.

Fraud prevention is an organizational metrics because it facilitate in the enhancement of overall economic performance and firm economic productivity. It also aids in the reduction of fraud risk both internally and externally. Achaka (2004) defined fraud as an action of dishonesty, deceit false claim, unlawful possession and services thereby causing the other party to at disadvantage. Frauds can occur to individuals and also to business organizations including commercial banks.

Fraudulent activities that occur in business environments are called corporate frauds. Corporate frauds are criminal activities in business organizations targeted to diminish by misappropriation, misrepresentation and manipulation of the assets, revenues and profits of organization (Abiola, 2009, Adestoso and Akinselure, 2015). Ochejele (2004) as cited by Ugwoke (2010) stated that corporate frauds is a deliberate step taken by one or more individuals who may be internal or external to a business organization, to deceive or mislead the organization with the objective of taking an unfair advantage of money, good and services. Common corporate frauds are embezzlement, payment against unclear and unauthorized lending which are frauds committed by the person in management, the employees of a business organization and people external to the organization (Kechinde et al., 2016).

Also, (Husna and Rika, 2016) argued that Profit margin management is proposed to be a solution to elude or anticipate the increase or decrease in profit for consistent and proportional implementation of net income management which will lead to future positive effect toward the company and bankruptcy avoidances in contrast if a company's credit policy is not highlighted and consistently manage the probability of future bankruptcy is high. Cloonan (2011) opined that a company's stock price in large part is driven by the company's ability to generate earnings. While (Amadeo, 2019, Scott, 2019) added that it is useful for investors to analyze the profitability of a company before investing in it and one way to do this is by calculating and tracking various profit margins which reflect how efficiently a company uses its resources. According to (Catherine, 2016) a business's exist to make a profit and profit margin can be achieved through different measures, which include raising prices and reducing costs.

Meanwhile research findings indicate that effective supply chain control and management lead to increased customer satisfaction and improved organizational performance (Haifa and Bach, 2014). Satisfaction is the consumer's assessment of a product or service in terms of the extent to which that product or service has met his/her needs expectation (Samaan, 2015). Haifa and Bach (2014) argued that customer satisfaction focuses on the quality of service or products that are offered by the manager regarding the price, warranty service, features and performances. According to Novella (2012) cited in Haifa and Bach (2014) customer satisfaction is deteriorated by poor service, product dissatisfaction, better prices from other cooperation and other reasons. Customer satisfaction is a measure of how the products and service provided by a company meet or exceed customer expectation (Fornell, 1992) cited in Samaan (2015).

Theoretical Review

According to Inanyang (2004) a theory provides the starting point for expressing prepositions about behaviour and performance. Koontz et al., (1972) propounded the theory of staff discipline and control. This theory is concerned with how the employees of organization are ready to comply with rules and regulations governing the conduct of the organization. The theory is interested in the ability of the employees to remain within the bounds of the rules defined by the organization. It measures how the employees comply with the rules of the organization. The control instrument is concerned with the ability of the organization to pursue and attain its intended objective using its control mechanisms. Similarly, Mintzberg (1983) developed the theory of trusted control. In this theory, trusted managers retain control power because they are socially responsive and exercise power responsibility. In order to implement an effective and efficient system of trusted control within organization, motivational power must be used to make employees adhere to ethical standard in their daily lives. Furthermore, motivational power helps them to regain a sense of purpose and mission, and make them emotionally attached to the organization.

The reason for combining theories and models is that theories can clarify the interconnection between concepts, and models can help in understanding supply chain control operating nature.

Empirical Review

Fritch (2015) study shows that supply chain control facilitates supply chain operations and also bring about improvement in the process of managing inventory efficiency performance, profit margin, customer satisfaction and profitability from the initial procurement. The study noted that supply chain control helps in the planning, execution, control and monitoring of supply chain activities with the objective of creating net value, building a competitive infrastructure, leveraging worldwide logistics, synchronizing supply with demand and measuring performance globally.

The study of Hayes (2019) shows that supply chain control oversees each touch point of a company's product or service, from initial creation to the final sales. Findings from the study revealed that supply chain control monitor many places along the supply chain that can add value through efficiencies or lose value through increased expenses. The study findings shows that proper supply chain control can increase revenues, decrease costs and impact a company's bottom line.

Abiola (2009) study on assessment of fraud management in Nigeria commercial banks, going by data collected on securities in the study area, 75% agreed that banks with security lapses in the management control and negligent customer is always bound to be a victim of fraud. The study confirms that lack of fraud detection devices in banks operations can be part of the causes of frequent fraud in the industry. The study further revealed that greed rather than poor salaries is what makes people to commit fraud and that poor salary is not an excuse to commit fraud. This leads to the acceptance of the null hypotheses that states that, poor salaries and inadequate working conditions cannot induce bank staff to commit fraud. However, if a man earns so little he is likely to commit fraud to meet his ever increasing needs hence, poor salaries and poor working conditions may be an inducement to commit fraud.

Ugwoke (2010) study which was on corporate fraud control and prevention systems in commercial banks in Enugu State, findings shows that management of the commercial banks encountered many problems in the establishment and utilization of the corporate fraud control and prevention systems. The problems restricted the full utilization and the effectiveness of the

systems. However, many strategies could be adopted to enhance the effective utilization of the system. Some of the strategies includes; specialized training, seminars and workshops for both the staff and management of the commercial bank.

The findings from the study of Scott (2019) shows that reducing the cost of goods sold improves gross profit margin, if sales revenue remains consistent. Likewise, decrease in fixed expenses adds to bottom line profit and increased net profit margin. A company facing profitability challenges may look at reducing administrative expenses such as accounting or human resources staff, because these departments typically don't add revenue to the business.

Coonan (2019) findings revealed that profit margins tell us how effective management is at turning sales into profits and whether the company is favourably positioned to whether a downturn or withstand competition. The findings show that supply chain control determines the success or failure of the company's profitability. Strong sales growth is meaningless if management allows costs and expenses to grow disproportionately.

The study of Samaan (2015) on the relationship between customer satisfaction and customer

loyalty in the banking sector in Syria revealed that customer expectation is of the greatest influences on customer satisfaction, than the customer loyalty with banks services. Data analysis suggests that if a bank wants to benefit from customer loyalty and the related positive outcome (increased positive word of mouth and attraction of new customers), there is a need to pay a special emphasis in increasing customer's perceived price.

Haifa and Bach (2014) findings on customer satisfaction shows a generated model that conceptualizes product pricing, trust, product quality, and services the driving forces for customer satisfaction. The purpose of the model is to offer a simplistic overview of the assessment of the customers' satisfaction.

The above studies correlate with our studies to show the causal relationship between strategic implementation of supply chain control activities with respect to fraud prevention, customer satisfaction and increase in profit margin. Upon these promises, this study sought to discuss this lacuna using a broader approach.

Conceptual Framework and Hypotheses

Figure 1 shows the conceptual framework develop to be examine in this analysis while the theory of staff discipline and control is used as the anchored theory, other theories are integrated to establish the structure of the work.

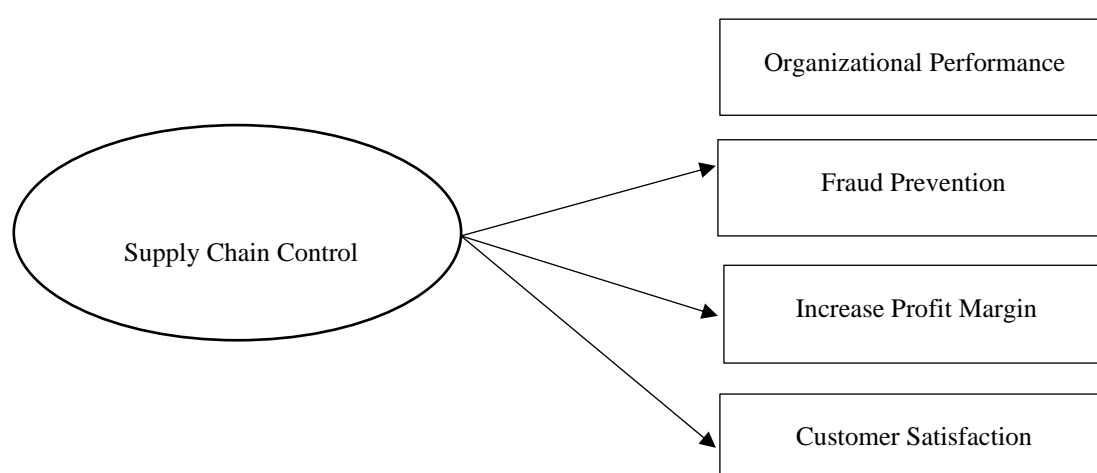


Figure 1: Conceptual Framework

Source: Researcher review of related lectures

Supply chain control as an independent variable in this study refers to the process of establishing goals and objectives by determining the resources and strategies needed as value – added mechanism across organizational boundaries to meet the real needs of the end customer. It is a tremendous asset for companies because it can reduce costs, improve customer's satisfaction, increase profit margin, and offer a better return on investment Nwanro (2013). Today, as value driven companies are growing in numbers, they are moving from competing on price to providing quality service and convenience. As value players gain share, at varying speeds across economies, they change the nature of competition by transforming consumer attitudes about trade-offs between price and quality Kachru (2010). Today, quality is considered an 'order qualifying' and not an "order winning" attribute of the product or service (Kachru, 2010). In order to be competitive, work needs to be done, customers need to be served, and day-to-day problems need to be addressed which is possible through supply chain control as a value creation mechanism (Hayes, 2019). Typical, supply chain control attempts to centrally harmonize or link the production, shipment, and distribution of a product by making sure the supply chain companies are able to cut excess cost and deliver products to the consumer faster. This is done by keeping tighter control of internal inventories, internal production, distribution, sales, and the inventories of companies (Hayes, 2019). Based on the above argument, the following hypotheses are initiated for verification.

H₀₁: There is a significant relationship between supply chain control and fraud prevention

H₀₂: There is a significant relationship between supply chain control and customer satisfaction.

H₀₃: There is a significant relationship between supply chain control and increase in profit margin.

H₁ to H₃ conceptualizes Supply chain control on the idea that nearly every product that comes to market results from the effort of various organizations that make up a supply chain. Therefore, Control help to harmonize all the interest of the partners in the chain and through control, the supply chain manager tries to minimize shortages and keep costs down (Hayes, 2019). Even though supply chain management is

the planning , execution, control, and monitoring of supply chain activities with the objective of creating net value, without effective and efficient or strong control in supply chain it could not be possible to build a competitive infrastructure, leveraging worldwide logistic, synchronizing supply with demand and measuring performance globally.

METHODOLOGY

The study adopted a quantitative cross-sectional survey of 22 commercial banks in Nigerian banking industry using judgment sampling techniques which is based on the researchers experience and knowledge about the sample units as to the fact that surveying them will be instrumental to the generation of relevant data for the achievement of the research objectives. This design was selected because the researchers made no effort to control extraneous variables as obtainable in experimental research. The sampling structure of the study included all commercial banks in Nigerian banking industry quoted in Nigeria's stock exchange or registered with Nigeria's Corporate Affairs Commission formed in 1990 on the basis of Allied Matt No 1 1990 as amended. The sample size composed 600 employees of commercial bank workers explicitly selected from the 22 commercial banks survey in all the branches.

The instrument tagged Supply Chain control and organizational Performance (SCCOP) was used in data collection. Primary data were collected using questionnaire from management staff of commercial banks. The instrument was divided into three sections, Section A, B and C. Section A comprises five items on the demographics of the respondents (gender, age, educational qualifications, marital status and years of experience). Section B comprised of 10 items on the independent variable (supply chain control). Section C comprises of 15 items on the dependent variables (organizational performance). Organizational performance was measured in terms of fraud prevention, customer satisfaction and increase profit margin. All items on the instrument excluding the demographics of the respondents were rated on five points scale of strongly agree, agree, disagree, strongly disagree and neutral which were scored 4,3,2,1 and 0 respectively. The instrument was validated by

two experts in Marketing, and one expert in Test and Measurements both from the University of Calabar, Calabar. The reliability of the instrument was determined using Cronbach Alpha method of reliability testing. The instrument was administered to 20 employees of commercial bank workers in Nigerian banking industry who are part of the main population but do not take part in the main study and results yielded reliability coefficients of 0.748, for supply chain

To collect the appropriate data, a hybrid of site visit and structured questionnaire was used. A total of 600 questionnaires were given to the employees of the purposely selected commercial banks. The definition of the questionnaire to be administered was built on the basis of the quality of the research hypotheses. The questionnaires were checked at the firms on the informant to ensure material consistency, accuracy and ease of use. The respondents were drawn from different banks in Nigeria by their classification/explicit obligations. The study purpose was clarified to the respondents and they were also given written guarantee of anonymity and confidentiality of answers (in the form of cover letters).

control, and 0.759, 0.782, 0.756 for fraud prevention, customer satisfaction and increase profit margin respectively. While the entire scale yielded reliability coefficient of 0.732, based on these reliability coefficients the instrument was adjudged reliable. Frequency, percentage and simple regression were used to analyze the data and analysis of the data was facilitated using the Statistical Package for Social Sciences (SPSS version 23).

The data was obtained in the two steps. First, the group's business development managers were interviewed structurally because their impression correctly defined the firm position based on their higher level and deep knowledge of the firm which was used to elicit the global views of the senior management and core issues with respect to supply chain control and organizational performance. Following regular visits and reminders (using telephone calls and text messages) to participants at organizational level such as; accountants, cashier's, general managers and marketing managers. 546 completed questionnaires, showing a response rate of 91% were retrieved. 54 questionnaires showing a response rate of 9% were considered unsuitable for inclusion in the analysis after testing for completeness of the responses, resulting in a modified sample size of 546. The summary of reliability coefficients is presented in table

Table 3.1 Summary of Cronbach's Alpha Reliability Results

Variables	N	K	SD	Reliability coefficient
Supply chain control	20	10	3.21	.748
Fraud prevention	20	5	3.57	.759
Customer satisfaction	20	5	2.39	.782
Increase profit margin	20	5	3.56	.756
Entire scale	20	35	9.61	.732

n- Number of respondents, k = number of items.

DATA PRESENTATION AND FINDINGS

This section represents the results of data analysis using frequency, percentage, mean, standard deviation and regression analysis. The demographics of the respondents were analyzed

using frequency and simple percentages while hypotheses were tested using regression analysis.

Data on the research variables, supply chain control, fraud prevention, customer satisfaction and increase in profit margin as obtained is reported in this section.

Table 4.1: Demographics of the Respondents

Demographics Variables	No. Of Respondents	Percentage (%)
Gender		
Male	284	52.0
Female	262	47.9
Age (years)		
26-30	102	18.6
31-40	140	22.9
41-45	121	22.2
46-50	92	12.5
51 and above	91	16.6
Qualification		
PhD	98	17.9
M.Sc	132	24.2
B.Sc / HND	210	38.5
OND	106	19.4
Marital Status		
Married	302	55.3
Single	244	44.7
How long have you been working with the company		
Less than 5 years	97	17.7
6-10 years	198	36.3
11-15 years	109	19.9
16-20 years	90	16.5
20 and above years	52	9.5

Source: Field survey (2020)

Result in Table 4.1 presents the demographics of the respondents. The result shows that 52.% of the respondents were male and 47.9% were female. In terms of their age distribution, 18.6% of the respondents were between age brackets 26-30 years, 22.9% were between age categories, 31-40 years while 22.2%, 12.5% and 16.6% of the respondents were between age groups 41-45 years, 46-50 years and 51 and above years

respectively. In terms of education qualification, 17.9% was those with Ph.D while 24.2%, 38.5%, 19.4% were Msc, B.Sc and OND respectively. Result also shows that 55.3% were married and 44.7% were single with 17.7% of the respondents having less than 5 years of working experience while 36.3%, 19.9%, 16.5% and 9.5% of the respondent had 6-10 years, 11-15 years, 16-20 years and 20 and above years of working experience respectively.

Table 4.2: Descriptive statistics for the scores obtained on the research variables

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness	Kurtosis		
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Supply chain control	546	10.00	39.00	15.8333	4.77186	1.823	.343	6.039	.674
Fraud prevention	546	5.00	19.00	9.6667	4.73786	1.837	.343	5.712	.674
Customer Satisfaction	546	5.00	20.00	9.3333	4.20461	1.481	.343	3.295	.674
Increase profit margin	546	5.00	22.00	9.6458	4.23866	1.505	.343	2.161	.674

Source: Researchers Computation with SPSS 23

Result of the descriptive statistics for the research variables is presented in Table 4.2. The descriptive statistics include the minimum, maximum, mean and standard deviation, skewness and kurtosis. The result shows that the mean score of 15.8333, 9.6667, 9.3333 and 9.6458 with standard deviations of 4.77, 4.74, 4.20 and 4.24 for supply chain control, fraud prevention, customer satisfaction, and increase profit margin respectively. The kurtosis of 6.04, 5.71, 3.30 and 2.16 were obtained for supply chain control, fraud prevention, customer satisfaction and

increase in profit margin respectively and skewness of 1.82, 1.84, 1.48 and 1.51 were obtained respectively. The skewness obtained were all greater than 0 meaning that the variables were all skewed to the right with kurtosis obtained for supply chain control, fraud prevention and customer satisfaction were greater than that of the normal distribution while that increase in profit margin was less than that of the normal distribution. The normality of the scores obtained on each of the variables using the Shapiro-Wilks test is presented in Table

Table 4.3: Summary of Normality Test using Shapiro-Wilk test for the Research Variables

	Shapiro-Wilk		
	Statistic	Df	P-value
Supply chain control	0.932	546	0.000
Fraud prevention	0.935	546	0.000
Customers Satisfaction	0.981	546	0.000
Increase profit margin	0.928	546	0.000

Source: Author's computation (2020) using SPSS version 23

Result presented in Table 4.3 reveals that supply chain control (P-value = 0.000), fraud prevention (P-value = 0.000), Customers Satisfaction (P-value = 0.000) and increase profit margin (P-value = 0.000) have their P-values less than 0.05 ($P < 0.05$). This indicates that among the

research variables, all the research variables were not normally distributed. Since regression analysis is run on the assumption of normality, it was necessary to log transform the data (log10) to make them normal.

Test of Hypotheses 1

H₁: There is a significant relationship between supply chain control and fraud prevention.

Table 4.4: Model summary for the regression relationship between supply chain control fraud prevention

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
	.439	.183	.176	2.90968	1.644

Source: Researchers Computation with SPSS 23.

Result in Table 4.4 shows r- square of 0.183 which means that 18.3 percent of the variation in fraud prevention was accounted for by supply chain control. This result also signifies that if there is any improvement in supply chain control, there will be a corresponding improvement in fraud prevention. The Durbin Watson value of

1.644 was obtained indicating that there is no evidence of autocorrelation. This is because The Durbin Watson value of 1.644 is greater than 1 but less than 3.00 which indicate that the error terms are not correlated as suggested by Field (Field, 2009). The result of the Analysis of Variance for the regression is shown in Table 4.5.

Table 4.5: ANOVA Result for the relationship between supply chain control and fraud prevention

Source of variation	Sum of Squares	Df	Mean Square	F-calc.	F-crit.	p-value
Regression	93.221	1	93.221	12.011	4.03	0.002
Residual	389.446	46	8.466			
Total	482.667	47				

*Significant at $p < 0.05$. Source: Researchers Computation with SPSS 23.

From Table 4.5, the F-critical of 12.011 was obtained with a p-value of 0.002 while the F-critical of 4.06 at the 0.05 level of significance. The result reveals that the F-calculated (12.011) is greater than the F-critical (4.06) at the 0.05 level of significances which means that there is a

significant linear relationship between supply chain control and fraud prevention. This result also implies that if there is improvement in supply chain control, there will be reduction in corporate fraud. The estimate of the parameters of the regression model is shown in Table 4.6.

Table 4.6: Parameters estimates of the regression model for hypothesis 1

	Unstandardized Coefficients		Standardized Coefficients	t-calc.	P-value
	B	Std. Error	Beta		
Constant	3.268	1.612		1.965	.055
Supply chain control	.373	.123	.339	3.318	.002

*Significant at 5 % ($p < 0.05$), t-critical = 2.01. Source: Researchers Computation with SPSS 23

Table 4.6 presents the regression coefficient for the model parameters. Result shows that supply chain control ($\beta = 0.439$, S.E = 0.123, t-calc. = 3.318, t-crit. = 2.01, $p = 0.002$, $p < 0.05$) has significant positive relationship with fraud prevention. The standardized beta coefficient of 0.339 was obtained which indicates that if other variables are held constant, for every 1 unit improvement in supply chain control, fraud

prevention will be improved by 0.339. Result also shows that t-calculated (3.218) is greater than the t-critical (2.01) at the 0.05 level of significance. Hence, the alternate hypothesis stated above is accepted therefore, there is a significant relationship between supply chain control and fraud prevention. This implies that supply chain control enhances fraud prevention.

Hypothesis 2

H₂: there is a significant relationship between supply chain control and customer satisfaction.

Table 4.7: Model summary for the regression relationship between supply chain control and customer satisfaction

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.309	.095	.075	3.11392	1.783

Source: Researchers Computation with SPSS 23

Result in Table 4.7 shows r -square of 0.075 which means that 7.5 percent of the variation in customer satisfaction was accounted for by supply chain control. This result also signifies that if there is any improvement in supply chain control, there will be a corresponding improvement in customer's satisfaction. The Durbin Watson value of 1.783 was obtained

indicating that there is no evidence of autocorrelation. This is because The Durbin Watson value of 1.783 is greater than 1 but less than 3.00 which indicate that the error terms are not correlated as suggested by Field (Field, 2009). The result of the Analysis of Variance for the regression is shown in Table 4.8.

Table 4.8: ANOVA Result showing relationship between supply chain control and customer satisfaction

Source of variation	Sum of Squares	Df	Mean Square	F-calc.	F-crit.	p-value
Regression	46.941	1	46.941	4.741	4.03	0.033
Residual	446.038	46	9.696			
Total	492.979	47				

*significant at $p < 0.05$. Source: Researchers Computation with SPSS 23.

From Table 4.8, the F-critical of 4.941 was obtained with a p-value of 0.033 while the F-critical of 4.05 at the 0.05 level of significance. The result reveals that the F-calculated (4.741) is greater than the F-critical (4.03) at the 0.05 level of significances which means that there is a

significant linear relationship between supply chain control and customer satisfaction. This result also implies that application of supply chain control will bring about rapid improvement in customer service. The estimate of the parameters of the regression model is shown in Table 4.9.

Table 4.9: Parameters estimates of the regression model for the relationship between supply chain control and customer satisfaction

	Unstandardized Coefficients		Standardized Coefficients		P-value
	B	Std. Error	Beta	t-calc.	
Constant	4.981	1.725		2.887	.006
Supply chain control	.265	.122	.305	2.300	.033

*significant at 5 % ($p < 0.05$), t-critical = 2.01. Source: Researchers Computation with SPSS 23.

Table 4.9 presents the regression coefficient for the model parameters. Result shows that supply chain control ($\beta = 0.305$, S.E = 0.122, t-calc. = 2.300, t-crit. = 2.01, $p = 0.033$, $p < 0.05$) has significant positive relationship with customer satisfaction. The standardized beta coefficient of 0.305 was obtained which indicates that if other variables are held constant, for every 1 unit improvement in supply chain control, customer satisfaction will improve by 0.305. Result also shows that t-calculated (2.30) is greater than the t-critical (2.01) at the 0.05 level of significance. Hence, the alternate hypothesis stated above is accepted. Therefore, there is a significant relationship between supply chain control and

customer satisfaction. This implies that supply chain control enhances customer satisfaction.

Hypothesis 3

H₃: There is a significant relationship between supply chain control and increase in profit margin.

Table 4.10: Model summary for the regression relationship between supply chain control and increase in profit margin

Model	R	R Square	Adjusted Square	R Std. Error of the Estimate	Durbin-Watson
	.354	.225	.106	3.22234	1.648

Source: Researchers Computation with SPSS 23

Result in Table 4.10 shows r- square of 0.225 which means that 22.5 percent of the variation in the increase in profit margin was accounted for by supply chain control. This result also signifies that if there is any improvement in supply chain control, there will be a corresponding increase in profit

margin. The Durbin Watson value of 1.648 was obtained indicating that there is no evidence of autocorrelation. This is because The Durbin Watson value of 1.648 is greater than 1 but less than 3.00 which indicate that the error terms are not correlated as suggested by Field (Field, 2009). The result of the Analysis of Variance for the regression is shown in Table 4.10

Table 4.11: ANOVA Result showing relationship between supply chain control and increase in profit margin

Source of variation	Sum of Squares	Df	Mean Square	F-calc.	F-crit.	p-value
Regression	68.275	1	68.275	6.474	4.03	0.014
Residual	477.641	46	10.384			
Total	545.917	47				

*significant at $p < 0.05$. Source: Researchers Computation with SPSS 23.

From Table 4.11, the F-critical of 6.474 was obtained with a p-value of 0.014 while the F- critical of 4.05 at the 0.05 level of significance. The result reveals that the F-calculated (6.474) is greater than the F-critical (4.03) at the 0.05 level of significances which means that there is a significant linear

relationship between supply chain control and increase profit margin. This result also implies that the application of supply chain control will lead to increase in profit margin. The estimate of the parameters of the regression model is shown in Table 4.11.

Table 4.12: Parameters estimates of the regression model for the relationship between supply chain control and increase in profit margin

	Unstandardized Coefficients		Standardized Coefficients	t-calc.	P-value
	B	Std. Error	Beta		
Constant	3.788	1.785		2.123	.039
Supply chain control	.320	.135	.394	2.464	.014

*significant at 5 %($p < 0.05$), t-critical = 2.01. Source: Researchers Computation with SPSS 23.

Table 4.12 presents the regression coefficient for the model parameters. Result shows that supply chain control ($\beta = 0.394$, S.E= 0.135, t-calc. = 2.464, t-crit. =2.01, $p = 0.014$, $p < 0.05$) has significant

positive relationship with increased in profit margin. The standardized beta coefficient of 0.394 was obtained which indicates that if other variables are held constant, for every 1 unit improvement in supply chain control, the will be increase in profit

margin by 0.394. Result also shows that t-calculated (2.564) is greater than the t-critical (2.01) at the 0.05 level of significance. Hence, the alternate hypothesis stated above is accepted. Therefore, there is a significant relationship between supply chain control and increase in profit margin.

Discussion of findings

The result of hypothesis one showed that there is a significant positive relationship between supply chain control and fraud prevention. The will be reduction in fraudulent corporate fraud activities in an organization when an awareness for proper implementation of supply chain control mechanism is created. These assertions are supported by the study of (Fritsch, 2015) that supply chain control facilitates operations that monitors fraud prevention and a significant relationship exist between supply chain control and fraud prevention.

The result of hypothesis two tests (H_{02}) shows that supply chain control has a significant positive relationship with customer's satisfaction. This is in line with the study of (Haifa and Bach 2015) which implies that supply chain control is the driving force for customer's satisfaction through effective service provision, high production quality and mutual trust. The application of supply chain control will bring about rapid development in customer service

The result of the test of hypothesis three (H_{03}) shows that supply chain control has a significant positive relationship with increase in profit margin. This result also implies that better control mechanism will lead to increase profit margin in line with the study of (Hayes, 2019) that state that supply chain control decreases expenses and increase profit margin by implementing adequate control measures.

Theoretical, Managerial and Research Implications

This study, therefore, uses simple linear regression, analysis of variance (ANOVA) to show statistical correlations between supply control and organizational performance of commercial banks. The study verified the results of previous

researchers such as (Fritsch, 2015, Hayes, 2019, Haifa and Bach, 2014, Ugwoke, 2010, Abiola, 2009, Scott, 2019) that supply chain control has too much effect on organizational performance in terms of fraud prevention, customer satisfaction and increase in profit margin. Therefore, this study is in conjunction with the theory of staff discipline and control and the theory of trusted control.

While the theoretical limitations of this hybrid strategy to supply chain managers are that we cannot depend on one conceptual interpretation when evaluating phenomena in supply chain management. We need to acknowledge many concepts to have a more details view of supply chain management and how these concepts should support one another. Regardless of the specific scenario, one theory may be selected as the predominant explanation theory and either matched by several other theoretical perspectives. The two theories chosen in this article are back by scientific proof mainly provided by the literature, in both general and to some degree within the supply chain management.

CONCLUSION AND RECOMMENDATIONS

The point of departure for our survey concerns was perhaps the attempt to analyze three research hypotheses on how organizations can prevent fraud, how their products can satisfy their customers and how to increase their profit margin to maintain a sustainable competitive advantage in line with our proposed theories. These issues are relevant as many decisions makers in business practice as well as in academia discuss these issues more frequently than thinking about new possible interpretation of the phenomenon of inter-organizational management of the transition flows between product and consumption.

We have made a coherent argument focused on behavioural theories to address our inquiries, which can be seen as an effort to minimize the distance between research and practice and established conceptual definitions and explanations. Furthermore, we have established a basic conceptual framework that incorporates the managerial supply chain management (SCM) domain with two different organizational theories

to describe our three hypotheses, and we have used our framework to analyze three different supply chain management problematic areas; Fraud prevention, customer satisfaction and increase in profit margin.

Our recommendation is that Supply managers should put in place supply chain control measures that will create an enabling environment for partners in the chain for value creation through collaboration, information sharing and cooperation to reduced conflict and fraud, improved on customer satisfaction and strives to increase organizations profit margin. Finally, we recommend that future researchers should replicated this study in other countries and industries focusing on the determinants of supply chain control mechanisms.

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Work-family conflict as antecedent to workplace deviance: a study among bankers

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Abstract

Hinged on the Job Demand-Resource model and Source Attribution Theory, this study assessed the relationship between work-family conflict (family-to-work and work-to-family conflicts) and workplace deviant behaviours (organizational and interpersonal deviance) among bank employees in Ghana. The quantitative two-wave longitudinal design was used, and data collected from 301 respondents. Unique self-generated codes were used to match the responses from each respondent in both times. Work-to-family conflict predicted interpersonal deviant behaviour in both Time 1 and Time 2, and organizational deviant behaviour in Time 2 but not in Time 1. Also, family-to-work conflict predicted interpersonal deviant behaviour in both Time 1 and Time 2 and also predicted organizational deviant behaviour in Time 1 only. This is one of the few empirical studies assessing the relationship between work-family conflict and workplace deviance, and in particular, among bankers. Assessing such relationships in this study over time has shown that variations in nature of the hypothesized relationships could be a result of extraneous variables (dynamic employee behaviour or environmental changes) not anticipated. Banks must pay particular attention to the job demands imposed on employees and again take interest in the out-of-job experiences of staff that could affect their job performance and involvement in deviant behaviours.

Keywords: work-family conflict, workplace deviance, bankers, Ghana, antecedents

INTRODUCTION

Deviant behaviours, considered to be intentional behaviours perpetrated by employees that go against the norms and values of the organisation and further threatens the well-being of the organisation and its members (Robinson & Bennett, 1997), are considered to be a growing problem and prevalent in most organizations across the world (Appelbaum, Deguire, & Lay, 2005; Mawritz, Mayer, Hoobler, Wayne, & Marinova, 2012). Puni and Anlesinya (2017) argued based on a review of several reported cases of deviant behaviours at various levels of organization in Africa and around the world that “crimes and unethical conducts in organizations, such as fraud, corruption and sexual harassment, are progressively becoming a common global phenomenon” (p. 212).

Evidence from literature suggests that about 95 percent of organizations are affected by deviant behaviours of their employees, out of which approximately 75 percent of such deviant behaviours are related to stealing (i.e., a form of organizational deviance) or bullying of a fellow employee (i.e., a form of interpersonal deviance) (Appelbaum, Iaconi, & Matousek, 2007; Henle, Giacalone & Jurkiewicz, 2005). In Ghana, a September 2019 report from the Bank of Ghana indicated that employees of banks were responsible for about GH¢19.1 million theft. A study by Korletey and Caesar (2018) found that in the Ghanaian banking sector, fraud was prevalent and it was committed by management and non-management staff in varying degrees. They noted in their study some drivers of fraud, including weak internal controls, opportunity and capability to engage in such a behaviour without being easily detected.

It is very necessary for organizations to have a deeper understanding of the antecedents of deviant behaviours because such deviant behaviours exhibited by employees have financial, psychological and social implications (Appelbaum *et al.*, 2007; Bodankin & Tziner, 2009; Henle, Giacalone, & Jurkiewicz, 2007). An appreciation of these antecedents and their related strength of relationship with deviant behaviours could help minimize their destructive impacts.

In this regard, a number of researchers have examined some antecedents including perceived external prestige (Tuna, Ghazzawi, Yesiltas, Tuna, & Arslan, 2016), abusive supervision (Ahmad and Omar, 2013) and organizational citizenship behaviours (Lee & Allen, 2002). Some studies have shown that work-family conflict is a potential antecedent of workplace deviant behaviour (e.g. Darrat, Amyx, & Bennett, 2010; Ferguson, Carlson, Hunter, & Whitten, 2012; Geurts, Kompier, Roxburgh, & Houtman, 2003). Work-family conflict is “... a form of inter-role conflict in which the role pressures from the work and family domain are mutually incompatible in some respect” (Greenhaus & Beutell, 1985, p.77).

Rubab (2017) found a significant and positive relationship between work-family conflict and workplace deviant behaviours. Earlier, O’Leary-Kelley, Griffin and Glew (1996) pointed out that deviant behaviours of employees create impaired working environments and attitudes that affect overall productivity because employees who are targets of deviant behaviours from others (i.e., interpersonal deviance) would experience high stress levels and exhaustion and eventually leave.

To this end, this study seeks to: examine the relationship between work-to-family conflict and interpersonal deviance; assess the relationship between work-to-family conflict and organizational deviance; find out the relationship between family-to-work conflict and interpersonal deviance; and examine the relationship between family-to-work conflict and organizational deviance.

The objectives are to address the empirical gap regarding the relationship between work-family conflict and workplace deviance which is largely under-researched. Again, owing to the Bank of Ghana report in September 2019 suggesting that over GH¢19 million was involved in bank employee theft in Ghana, and the finding by Korletey and Caesar (2018) that both managerial and non-managerial staff of banks are involved in deviant behaviours at banks, this study sought to further investigate this phenomenon empirically, with work-family conflict serving as the antecedent of the workplace deviant behaviours. The study also lends credence to the Job Demand-Resource (JD-R) model (Bakker & Demerouti, 2007) in

explaining the relationship between work-family conflict and workplace deviance.

EMPIRICAL REVIEW, THEORY AND HYPOTHESES

The Job Demand-Resource (JD-R) model (Demerouti, Bakker, Nachreiner & Schaufeli, 2001) and the Source Attribution Theory (SAT) (Shockley & Singla, 2011) are the underlying theories in this study. The JD-R model explains how the working conditions of employees influence outcomes related to the job and health (Bakker & Demerouti, 2007). Two broad categories of work characteristics are job demands and job resources, as proposed by the JD-R model, however, what constitutes these characteristics are different for every occupation (Bakker & Demerouti, 2007). Examples of job demands are work-family conflict, emotional dissonance, perceived organizational politics and work overload. Examples of job resources are performance feedback, social support at work, training and rewards. From these come the two different processes of the JD-R model, which are the health impairment process and the motivational process as advanced by Bakker and Demerouti (2007) and Llorens, Bakker, Schaufeli, and Salanova (2006).

The health impairment process considers the extent to which the physical and emotional resources of employees get used up as a result of jobs that are poorly designed or jobs that have high demands on those who perform them. As a consequence, such employees experience high levels of stress and other negative job outcomes (Bakker & Demerouti, 2007; Llorens *et al.*, 2006). The negative outcome could also be in the form of deviant behaviours which become a way of reacting to the highly demanding jobs. Such deviant behaviours could be obvious or perhaps subtle in most cases. The motivational process holds that the motivational role of job resources lowers job demands and promotes growth of employees, their learning and development (Bakker & Demerouti, 2007; Llorens *et al.*, 2006).

With specific reference to this study, the JD-R model holds that when individual workers experience high levels of demands (work-family conflict) on them in the work domain, it could lead to some negative work outcomes including workplace deviance. Such deviance could be targeted at the organization and its products and services (i.e., organizational deviance) or to other coworkers (i.e., interpersonal deviance).

The SAT (Shockley & Singla, 2011) holds that aside the drain that work-family conflict has in both work and family domains, it also results in reactionary behaviours towards the source of the conflict. Eventually, when the main source of the conflict is from the work domain, employees are more likely to engage in behaviours that affect the organization itself (organizational deviance) or colleague employees (interpersonal deviance). If employees therefore experience more of work-to-family conflict, it is expected that their deviance levels towards the organization and coworkers would be as well high.

Workplace Deviance in Banks

Some recent studies into workplace deviant behaviours in banks have looked at antecedents such as: loneliness in the workplace (Promsri, 2018), emotional intelligence (Makkar & Basu, 2019), job insecurity, employment status and perceived organizational support (Eze, Omeje, Okonkwo, Ike, & Ugwu, 2019), organizational commitment (Promsri, 2018), volunteering behaviours (Loi, Kuhn, Sahaym, Butterfield, & Tripp, 2020), perceived insecurity and inequity (Benjamin & Samson, 2011), among others. In Ghana in particular, some recent studies have associated deviant behaviours with factors including: role of gender (Kiran & Sharma, 2020), and leadership styles and turnover intentions (Puni, Agyemang, & Asamoah, 2016). These studies, largely cross-sectional in design, have shown that there are several predictors of workplace deviant behaviours among employees in banks.

Benjamin and Samson (2011) examined how perceptions in inequality and job insecurity impacts fraudulent behaviours of bank employees in Nigeria. Their study showed that perceptions of bank employees about inequalities in their

workplace as well as perceptions about job insecurity affected their intentions to engage in fraudulent activities. This is in line with some studies based on the norm of reciprocity that people tend to respond in a positive way when conditions are favourable and in turn respond negatively when conditions are not favourable (eg. Eisenberger, Lynch, Aselage, & Rohdieck, 2004; Gouldner, 1960; Uehara, 1995). Thus, drawing from the JD-R model, with work-family conflict considered as job demand and deviant behaviours also considered as the outcome of the health impairment process, it is hypothesised as follows:

Hypothesis 1: Work-to-family conflict will significantly predict interpersonal deviant behaviour

Hypothesis 2: Work-to-family conflict will significantly lead to organizational deviant behaviour

Hypothesis 3: Family-to-work conflict will significantly impact interpersonal deviant behaviour

Hypothesis 4: Family-to-work conflict will significantly result in organizational deviant behaviour

RESEARCH METHODOLOGY

Research Design

This study used two-wave quantitative longitudinal research design. Wang, Beal, Chan, Newman, Vancouver, and Vandenberg (2017) have noted that in longitudinal designs, one of the factors to be considered in the time period between one time and another depends on the length of time or period of the study. Prior to data collection, informal discussions with some bank employees revealed that there is a lot of labour movement within the sector and also staff hardly stayed in one branch or bank for a long time. This informed the time interval of 3.5 months, which is deemed sufficient.

Population and Sample

The population for this study, therefore, is employees of banks in Ghana, whether private or public. The accessible population for this study included banks that gave the nod for data to be collected from their employees. In order to reduce coverage error, sixteen (16) out of the twenty-three (23) commercial banks in Ghana were targeted, out of which seven (7) banks agreed to be part of the study. For ethical reasons, banks could not be coerced to partake in the study; it was a free-will decision for which the researcher could not influence. Therefore, the study targeted approximately 70% of existing commercial banks in Ghana, out of which approximately 30% gave their approval for data to be collected from their employees. Respondents were not required to indicate their personal identity on the questionnaire; rather, they were asked to generate unique ID codes for each round of the data collection process. Eventually 301 successfully matched respondents were used for the data analysis.

Data Collection Instruments

The work-to-family conflict and family-to-work conflict 10-item scale adopted for this study was developed by Netemeyer, Boles and McMurrian (1996). Coefficient alpha values for the sub-scales for both work-family conflict and family-work conflict range from .88 to .89 (Netemeyer *et al.*, 1996). Some items in the scale were: *work demands interfere with family life* (work-to-family conflict) and *family demands interfere with demands at work* (family-to-work conflict). The 14-item scale for workplace deviant behaviour was developed by Aquino, Lewis and Bradfield (1999), and it describes the two categories of deviant behaviour – interpersonal deviance and organizational deviance. The scale has $\alpha=.73$ for interpersonal deviance and $\alpha=.76$ for organizational deviance (Aquino *et al.*, 1999). Sample items were: *I intentionally arrived late for work* (organisational deviance) and *I refused to be in talking terms with a co-worker* (interpersonal deviance).

DATA ANALYSIS AND RESULTS

Reliability of Data Collection Instruments

From the Cronbach's alpha scores in Time 1 and Time 2 (see Table I), it is seen that the responses were consistent and highly reliable. Scales that result in an alpha of at least 0.7 are considered fairly reliable (Shemwell, Chase, & Schwartz, 2015). All the alpha scores are above the 0.7 recommended threshold.

Table I Reliability Scores of Scales for the Study

Scale	No. of Items	Original α	Time 1 α	Time 2 α
Work-to-family conflict	5	0.88	0.90	0.92
Family-to-work conflict	5	0.89	0.86	0.85
Interpersonal deviance	6	0.73	0.82	0.82
Organizational deviance	8	0.76	0.89	0.87

Demographic Information

Data for the analyses were obtained from 301 individuals who successfully took part in the study at both times. Those who took part in only one round of the study were not included because there was no information on them for the purpose of comparison; rather they were treated as statistics of attrition. The sample were from private banks ($n=184$; 61.1%) and a public bank ($n=117$; 38.9%). The following demographic details were obtained from the respondents: gender, age, number of years of working in the banking sector, number of years of working in the present bank, marital status and number of direct dependents. Table II below gives a summary of the demographic details obtained from the close-ended set of demographic variables. It must be noted that the same individuals were involved in the study in Time 1 and Time II.

Table II Demographic details of respondents

Variables	Frequency	Percent (%)
Ownership:		
Public	117	38.9
Private	184	61.1
Gender:		
Female	177	58.8
Male	124	41.2
Age (in years):		
21-30	118	39.2
31-40	133	44.2
41-50	32	10.6
51-60	18	6.0
Marital Status:		
Single	138	45.8
Married/Cohabiting	157	52.2
Separated/Divorced	5	1.7
Widowed	1	0.3

Note: $N=301$

Data obtained from the gender of the respondents shows that there were 53 more females than males, representing a relatively higher female than male voice in the responses given. The data further shows that the workforce of the banks are very youthful, with 83.4% of the respondents between the ages of 21-40 years, and 16.6% from 41-60 years. It further shows that a majority of the respondents ($n=157$; 52.2%) are currently in a form of committed relationship (i.e., married or cohabiting), with or without children, thereby making them have at least one dependent (spouse).

Missing Data, Normality and Item Parceling

An inspection of the data showed that cases of missing data were missing at random (MAR) and were not specific items which could have arisen from question sensitivity or data entry errors (Allison, 2003). The approach used was the *within-*

person-missing-means-substitution and it is regarded as an effective strategy (Dodeen, 2003). Normality of latent variables was measured using indices from skewness and kurtosis outputs. According to Kline (2005), skewness statistics greater than 3.0 and kurtosis values more than 10 are considered problematic. The skewness and kurtosis values were all appropriate in this study despite the relatively large sample.

Usually the increase in the number of indicators result in a decrease in the value of the fit indices (Anderson & Gerbing, 1984; Nasser-Abu Alhija, & Wisenberger, 2006) because of implicit contamination of shared secondary influences that eventually hinder overall model fit. Thus, parceling using composite-level indicators result in more reliable and normally distributed data. This informed the need for parceling by using three to four indicators per construct or latent variable instead of larger numbers. Three parcels were created for all constructs except the organizational deviance scale which had four parcels (see Table III).

Table III Reliability scores after item parceling

Scale	No. of parcels	Time 1 α	Time 2 α
Work-to-family conflict	3	0.91	0.92
Family-to-work conflict	3	0.87	0.86
Interpersonal deviance	3	0.84	0.86
Organizational deviance	4	0.92	0.89

Confirmatory Factor Analysis

For all the study variables, a confirmatory factor analysis was carried out using AMOS 16.0 (Byrne, 2010) to test the fit of the measurement model. The maximum-likelihood estimation (MLE) is used in the AMOS programme to assess model fit by providing indices of the model fit. The statistical estimates that were used were: chi-square (χ^2), and

chi-square/df (χ^2/df). The following alternative fit indices were also applied: root mean square error of approximation (RMSEA), comparative fit index (CFI), and standardised root mean squared residual (SRMR). Hu and Bentler's (1999) proposed cut-off points were used: estimates that are close to or less than .08 for SRMR, greater or equal to .95 for CFI and less than .06 for RMSEA indicate adequate fit.

The output values generated from the confirmatory factor analyses were assessed to ensure construct validity with a minimum factor loading of .03 (Brown, 2006). For discriminant validity of latent variables, the size of the factor correlations were checked to ensure that they were not greater than or equal to .80 as a way of dealing with multicollinearity (Brown, 2006; Kline, 2005).

Confirmatory Factor Analysis and Convergence Validity

The tables for model validity measures and the model fit indices were generated using Gaskin and Lim's (2016) plugin in AMOS. These were done for Time 1 and Time 2. Table IV and Table V provide summaries of the respective validity measures and model fit indices.

Table IV Model fit measures after item parceling

Measure	Estimate	Threshold	Interpretation
χ^2	273.960 187.723	--	--
d.f.	134 137	--	--
χ^2/df	2.044 1.370	Between 1 and 3	Excellent
CFI	0.967 0.986	>0.95	Excellent
SRMR	0.040 0.034	<0.08	Excellent
RMSEA	0.059 0.035	<0.06	Excellent
PClose	0.069 0.982	>0.05	Excellent

Note: Time 2 estimates (in Table IV) in bold

From the indices shown in the above tables (Table IV and Table V) for Time 1 and Time 2, the fit measures show that the model is adequately fit, and this suggests that the data is adequately represented

by the model, and that the model quality can be accepted.

Table V Convergence Validity Estimates for Time 1

Construct	Indicators	Factor Loading	C.R.	AVE	MaxR(H)
WFC	WFC_2	.863 (.865)	.911 (.917)	.774 (.787)	.928 (.940)
	WFC_13	.941 (.955)			
	WFC_45	.831 (.837)			
FWC	FWC_2	.859 (.813)	.877 (.863)	.706 (.678)	.893 (.867)
	FWC_13	.898 (.835)			
	FWC_45	.757 (.822)			
IDB	IDB_13	.888 (.827)	.857 (.856)	.669 (.665)	.882 (.859)
	IDB_24	.859 (.778)			
	IDB_56	.693 (.840)			
ODB	ODB_51	.866 (.810)	.917 (.894)	.735 (.679)	.918 (.896)
	ODB_28	.871 (.832)			
	ODB_37	.842 (.856)			
	ODB_46	.850 (.797)			

Note 1: WFC (work-to-family conflict); FWC (family-to-work conflict); IDB (interpersonal deviance); ODB (organizational deviance)

Note 2: The individual numbers after the underscore for each construct represent the indicators combined during the item parceling

Note 3: Time 2 estimates are shown in bold and in parenthesis

Bivariate Correlation Within and Across Time

In Time 1, all paired constructs were significantly correlated with each other positively and significantly. All constructs had significantly positive correlations. The respective constructs in Time 1 also correlated significantly with their respective Time 2 data. Thus, work-to-family conflict ($r = .73, p < .05$), family-to-work conflict ($r = .74, p < .05$), interpersonal deviant behaviour ($r = .58, p < .05$), and organizational deviant behaviour ($r = .46, p < .05$).

Table VI Correlation Matrix of Variables and Constructs Within and Across Time

	1	2	3	4	5	6	7	8	9	10	11	12
1. Ownership 1												
2. Gender	-.18**	1										
3. Age	.30**	.03	1									
4. Marital Status	.19**	-.06	.45**	1								
5. WFC_T1	.10	-.08	.10	.10	1							
6. FWC_T1	.13*	.01	.002	.06	.46**	1						
7. IDB_T1	-.01	.08	.11	.11	.25**	.26**	1					
8. ODB_T1	-.01	.12*	.12*	.15*	.12*	.19**	.74**	1				
9. WFC_T2	.14*	-.04	.08	.06	.73**	.38**	.21**	.14*	1			
10. FWC_T2	.09	.02	.01	.04	.32**	.74**	.21**	.19**	.49**	1		
11. IDB_T2	-.02	-.002	-.02	.04	.15*	.17**	.58**	.41**	.29**	.29**	1	
12. ODB_T2	.04	-.03	-.02	.05	.07	.11	.36**	.46**	.28**	.23**	.58**	1

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

Structural Model for Relationships

Based on available empirical evidence and theory, the estimated structural models developed are presented.

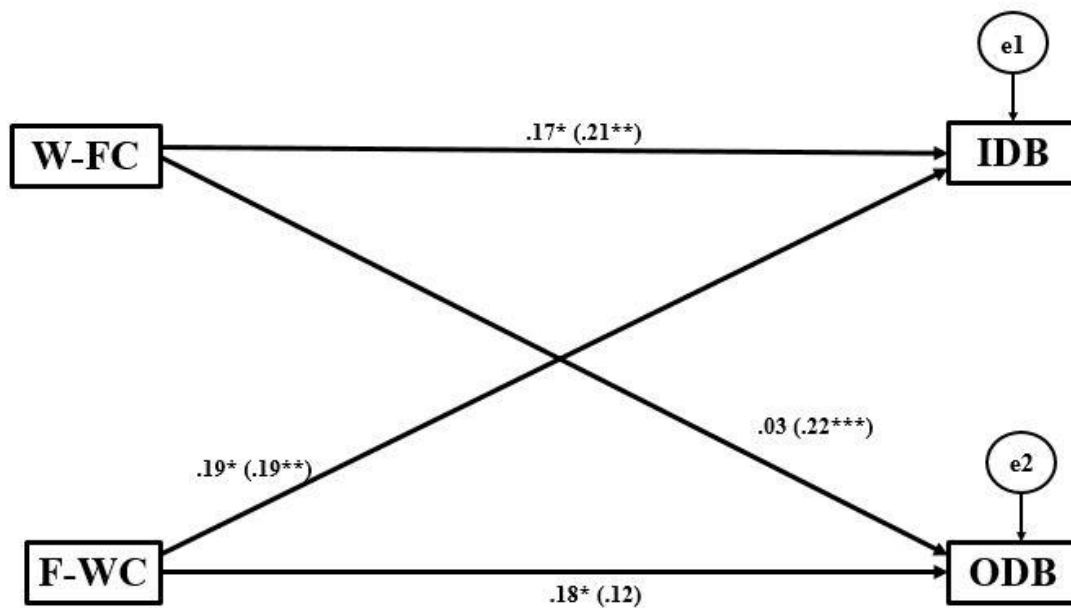


Figure I Structural Model for Direct Predictor-Outcome Estimates

- $*=p<.05$; $**=p<.01$; $***=p<.001$
- Estimates for Time 1 in Figure 1 are shown outside the brackets while estimates for Time 2 are in brackets;
- Demographic variables are included in model.

With $\chi^2=208.36$, d.f.=95, $\chi^2/\text{df}=2.19$, CFI=.96, SRMR=.04, RMSEA=.06, and PClose=.033, the model for Time 1 was adequately fit as the fit measures are in line with the recommended thresholds. The model fit indices for direct relationship in Time 2 showed the following: With $\chi^2=140.514$, d.f.= 95, $\chi^2/\text{df}=1.479$, CFI=.982, SRMR=.031, RMSEA=.040, and PClose=.885, the model was adequately fit as the fit measures are in line with the recommended thresholds.

DIRECT PATH HYPOTHESISED RELATIONSHIPS

Hypothesis 1: Work-to-family conflict is positively related to interpersonal deviant behaviour

The overall structural model as seen in Figure I shows that work-to-family conflict in Time 1 ($\beta=.17^*$, $p<.05$) and Time 2 ($\beta=.21^{**}$, $p<.01$) significantly predicted interpersonal deviant behaviour. The standardised regression weights suggest a positive relationship such that as work-to-family conflict increases, there is a respective corresponding increase in employee involvement in interpersonal deviant behaviours significantly. *Hypothesis 1* is therefore confirmed by the data. Since the positive effects were significant in both Time 1 and Time 2, it shows that to a greater

degree, there is consistent evidence that when employees experience increasing levels of work-to-family conflict, they are also likely to be engaged in interpersonal deviance although the estimate in Time 2 was higher than in Time 1.

Hypothesis 2: Work-to-family conflict positively predicts organizational deviant behaviour

The overall structural model as seen in Figure 1 shows that work-to-family conflict in Time 1 does not significantly predict organizational deviant behaviour ($\beta=.03$, $p>.05$), but in Time 2, work-to-family conflict significantly predicted organizational deviant behaviour ($\beta=.22$, $p<.001$). The result shows that high levels of work-to-family conflict are associated with high levels of organizational deviance. This relationship is however not statistically significant in Time 1. In Time 2, the standardised positive regression weight of $\beta=.22$ suggests that when work-to-family conflict increases, organizational deviant behaviour also increases, and this is statistically significant. The positive relationship suggests that as levels of one variable increase, so do levels of the other variable. *Hypothesis 2* is supported by data in Time 2 but not in Time 1.

Hypothesis 3: Family-to-work conflict is positively related to interpersonal deviant behaviour

The overall structural model as seen in Figure 1 shows that family-to-work conflict in Time 1 significantly predicts organizational deviant behaviour ($\beta=.19$, $p<.05$). In Time 2 too, family-to-work conflict significantly predicted interpersonal deviant behaviour ($\beta=.19$, $p<.01$). The standardised regression weight of $\beta=.19$ in Time 1 suggests that when family-to-work conflict increases, a significant increase also results in interpersonal deviant behaviour. In Time 2, the standardised regression weight of $\beta=.19$ suggests that when family-to-work conflict increases, there is also significant increase in levels of interpersonal deviant behaviour. The data in Time 1 and Time 2 therefore support *hypothesis 3*.

Hypothesis 4: Family-to-work conflict is positively related to organizational deviant behaviour

The overall structural model as seen in Figure 1 shows that family-to-work conflict in Time 1 significantly predicts organizational deviant behaviour ($\beta=.18$, $p<.05$). In Time 2, however, family-to-work conflict did not significantly predict organizational deviant behaviour ($\beta=.12$, $p>.05$). The standardised regression weight of $\beta=.18$ in Time 1 suggests that when family-to-work conflict increases, there is a corresponding significant increase in organizational deviant behaviour. Again, in Time 2, the standardised regression weight of $\beta=.12$ suggests that when family-to-work conflict increases, there is also increase in organizational deviant behaviour, though not statistically significant. The data in Time 1 supports *hypothesis 4* but not data in Time 2.

Discussions

The results in *hypotheses 1* and *2* gave credence to an earlier study by Darrat *et al.* (2010) which showed that work-family conflict exhibited significant positive relationships with interpersonal deviant behaviour and organizational deviant behaviour. They did not distinguish between family-to-work conflict and work-to-family conflict but used a composite five-item scale developed by Netemeyer *et al.* (1996) to assess interpersonal deviance, organizational deviance, and customer-directed deviance. This study distinguished between work-to-family conflict and family-to-work conflict because both dimensions are conceptually distinct and therefore prudent to address them separately. It was observed that the link between work-to-family conflict and interpersonal deviant behaviour is positive, suggesting that an increase in levels of work-to-family conflict would have a correspondingly positive incidence in interpersonal behaviours. This is because an individual becomes psychologically drained from the experience of work-to-family conflict such that one is predisposed to engaging in a behaviour that hurts

another work colleague physically or emotionally. Thus, if the employee who is experiencing conflict does not possess the requisite resources to contain and control resultant behaviours, other work colleagues eventually suffer negative emotional and behavioural transfer from the incumbent.

Hypothesis 1 is therefore confirmed by data in both Time 1 and Time 2 but *hypothesis 2* is confirmed by data only in Time 2 but not in Time 1, thereby making *hypothesis 2* being partially supported by the data. At this point a key question that comes up is how the same questionnaire with the same people at two different times would yield differences in levels of significance. This could be attributed to the time lag between the first and second rounds of data collection, and that probably, other events took place in the banks between the end of the first round of data collection and the beginning of the second round of data collection. The first round of data collection took place about two months after the deadline date for commercial banks to meet the new minimum capital requirement set by the Bank of Ghana (Bank of Ghana, 2018). It is therefore possible that the mood, anxiety and suspicions of the respondents made them respond the way they did because they were still not comfortable with the researcher although they were informed that it was an academic exercise. By the time of the second round of data collection, they were relatively more comfortable and relaxed to complete the questionnaires.

What this therefore means is that the link between work-family conflict and workplace deviant behaviours may not necessarily be consistent among individuals because of other underlying factors that may not have been considered in the research process. Also, some perceptions, behaviours and attitudes change over varying degrees of time, and this could count as a possible reason for the differences seen in results in both times of data collection, especially in the case of work-to-family conflict-organizational deviance relationship. In spite of the differences, the study shows that when work-to-family conflict increases, employees equally engage in deviant behaviours.

With respect to family-to-work conflict and interpersonal deviant behaviour and organizational deviant behaviour, it was observed that data in both

Time 1 and Time 2 supported *hypothesis 3* which sought to assess the impact of family-to-work conflict on interpersonal deviant behaviour of bank employees. *Hypothesis 4* focused on the extent to which family-to-work conflict predicts organizational deviant behaviour among bank employees. Data in Time 1 showed a significant prediction while data from Time 2 in the same measure did not support the hypothesis.

The work-family conflict composite measure used by Darrat *et al.* (2010) included elements of family-to-work conflict. In relation to interpersonal deviance, their study showed a significant relationship with the composite measure of work-family conflict, which is in line with *Hypothesis 3* of this study, thereby supporting data from both Time 1 and Time 2. In the study by Ferguson *et al.* (2012), family-to-work conflict was linked with production deviance, which is a form of organizational deviance. Again, Darrat *et al.*'s (2010) study showed a significant positive relationship with organizational deviance. These two outcomes are in line with *Hypothesis 4*, and it is confirmed eventually by data in Time 1 but not in Time 2. *Hypothesis 3* is therefore supported by data in Time 1 and Time 2 while only data in Time 1 supports *Hypothesis 4*.

The regression weights were all positive for both "family-to-work conflict and interpersonal deviant behaviour" and "family-to-work conflict and organizational deviant behaviour", thereby suggesting that an increase in levels of family-to-work conflict impacts deviant behaviours in the same direction. Therefore, in line with the health impairment process of the JD-R model (Demerouti, Bakker, Nachreiner & Schaufeli, 2001), the conflicts arising from the demands from the family to the work domain eventually deplete employees' mental and physical energies, such that they are unable to, for instance, arrive early to work, work conscientiously, or even relate cordially with their work colleagues.

Hypotheses 1-4 were premised on studies conducted by Darrat *et al.* (2010) and Ferguson *et al.* (2012) in which they examined the relationship between work-family conflict and deviant behaviours. It was also premised on the JD-R model, with both work-to-family conflict and family-to-work conflict considered as job demands, and the deviant

behaviours as consequences of the health impairment process of the JD-R model.

Darrat *et al.*'s (2010) study was undertaken among salespersons where the effect of work-family conflict was linked to three forms of deviance: interpersonal deviance, organizational deviance, and customer-directed deviance. They found that increased conflicts in the performance of work and family roles correspondingly led to an increase in the violation of organizational norms that also affected critical organizational outcomes. Ferguson *et al.*'s (2012) study, based on the crossover and spillover literature as well as Hobfoll's (1989) Conservation of Resources Theory, examined work-family conflict and production deviance. They found that high levels of family-to-work conflict was associated with the incidence of production deviance, and that men were more likely than women to experience production deviance. Also, there was a crossover effect of partner work-to-family conflict on the incumbent's production deviance. In this present study, work-family conflict (i.e., family-to-work conflict and work-to-family conflict) is linked directly to workplace deviant behaviours (i.e., interpersonal deviant behaviour and organizational deviant behaviour).

CONTRIBUTIONS OF THE STUDY AND CONCLUSION

The study provides empirical evidence that work-family conflict (i.e., both work-to-family conflict and family-to-work conflict) has a positive relationship with workplace deviant behaviours. That is, when employees experience high levels of conflict associated with the demands in their roles in the family domain and in the work domain, they are also likely to engage in some form of deviant behaviour. Over time, however, the role demands from the work domain become more profound in the work-family conflict and workplace deviance relationship.

The source of the conflict therefore seems to be the direction toward which the "aggression" or deviant behaviour is directed, thereby lending credence to the SAT (Shockley & Singla, 2011) as well as the

JD-R model (Demerouti *et al.*, 2001). Apart from the resources that work-family conflict drains across the family and work domains, it as well triggers certain behaviours towards the source of the conflict. The main source of conflict experienced by employees was from the work domain (i.e., source attribution and job demands), and so in the long-term, the work-to-family conflict influenced deviant behaviours (i.e., outcome of source attribution and JD-R model) at the workplace as seen in this study. With limited studies assessing the link between work-family conflict and workplace deviant behaviour, this study makes meaningful contribution to empirical literature and to theory as pointed out.

The study shows that empirically, work-to-family conflict and family-to-work conflict have a positive relationship with both interpersonal deviant behaviour and organizational deviant behaviour. What this means is that increasing levels of experience of any of the forms of work-family conflict predisposes such an employee to engaging in at least one form of deviant behaviour. In other words, increasing levels of work stress accounts for variability in both interpersonal deviance and organizational deviance.

From this study, especially considering some differences in findings in Time 1 and Time 2, it can be concluded that the experiences employees have regarding work-family conflict and workplace deviance could be influenced by certain uncontrolled or unexpected environmental or personal factors that the researcher may not be aware of at the time of the research. It also shows points to the dynamism of the individual worker's behaviour over time.

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Towards a Sustainable Corporate Social Responsibility Discharge and Accountability in the Extractives Industry

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Abstract

The paper examines how Corporate Social Responsibility (CSR) activities manifest and their respective discharge and accountabilities in the extractives industry. The study employs content analysis to examine the sustainability reports of two leading extractive firms in Ghana namely, AngloGold Ashanti and Tullow plc. Thereafter, it engages relevant stakeholders in interviews to probe deeper into the results of the content analysis to corroborate the evidence from the companies. The results indicate that the CSR discharge and accountability of the firms are inconsistent with society's expectations and that the firms employ legitimization mechanisms in their CSR practices to obtain and retain social licenses to operate. Hence, CSR discharge and accountability of the firms are rather superficial and rhetoric in nature and performed just to keep themselves in a positive light, while enhancing corporate reputation and visibility. The study contributes to the CSR literature by specifically focusing on how CSR activities manifest and their respective accountability discharge in the extractives industry. The paper takes a holistic multidimensional methodological approach to resolve CSR and respective accountability issues, unlike existing studies that look at the substantive issue on a piecemeal basis, thus, either through interviews or content analysis. It provides useful information to policymakers and a reference point to industry on their CSR accountability strategies and subsequent implementation.

Keywords:

Accountability, Corporate Social Responsibility, Extractive Industry

INTRODUCTION

Globally, Corporate Social Responsibility (CSR) has become a topical issue, particularly, in the extractive industries within developing countries (Jamali and Carroll, 2017; Jamali et al., 2017; Lim and Greenwood, 2017; Ansu-Mensah et al., 2021). Extractive companies are progressively pressured to address a comprehensive set of social responsibilities beyond legal and environmental requirements, which requires that they incorporate a holistic approach to their activities. This has led to an increase in awareness of the concept in academic literature with studies focusing on different aspects of CSR (Aguinis and Glavas, 2012; Lim and Greenwood, 2017; Ansu-Mensah et al., 2021; Simpson et al., 2021). Some studies have focused on the meanings, definitions, and models of CSR (see Carroll, 1999; Waddock, 2004; Wood, 2010; Crane and Matten, 2020). Others have examined the impact of CSR on firm performance (see Carroll and Shabana, 2010; Apospori et al., 2012; Malik, 2014). Some studies have also been fixated on CSR and the creation of shared value (see Porter and Kramer, 2011; Leila and Trap, 2012; Chandler and Wether, 2013). The extant literature opines that studies have highlighted core issues in CSR including the role and evolution of CSR in Africa's extractive industry (Hilson, 2012; Esau and Malone, 2013). Other studies have explored the role of CSR, possible areas of prevalence, and some superlative CSR practices from the extractive industry (see Ranangen and Zobel, 2014; Kozubek, 2016). See also Ansu-Mensah et al. (2021) who examined CSR and stakeholder engagement and Simpson et al. (2021) who examined the assurance of environmental, social and governance disclosures in a developing country. None of these studies however explored how CSR practices manifest and the respective CSR accountabilities discharged in the extractive industry in developing economies. Further to this, Amaeshi et al. (2016) and Egbon et al., (2018) have called for the need to have a study that explores the holistic view of all stakeholders on CSR within the Sub-Saharan extractive industry. Hence, making community consent and engagement (Which has been relegated to the background), critical issues in CSR practice.

This presents a commitment for companies to engage host communities to address their concerns on social and environmental issues. In the case of extractive companies, it provides an opportunity to build a sustainable relationship while levelling power asymmetries between the company and the community (See Slack, 2011; Jamali and Carroll, 2017). For this to suffice, Egbon et al. (2018) noted that inclusivity and accountability are core and critical to corporate-community relations and for achieving community development (see also Ansu-Mensah et al., 2021). Hence calling for an urgent commitment and investigations into a holistic approach to sustainable CSR and respective accountability practices within the Sub-Saharan region. See also previous calls from Aaron (2012), Belal, et al., (2013), Amaechi et al. (2016). In this respect, the paper, seeks to examine how CSR activities manifest and the respective CSR accountabilities discharged in the extractives industry.

In achieving this purpose, we answer the following research questions.

~~developmental challenges in the extractive industry and are drawn in developed countries to those that~~

- i. How are CSR activities manifested and discharged in the extractive industry?
- ii. How has society's expectations been, regarding the sustainable discharge of CSR?

The rest of the paper is structured as follows. The next section sets out the background of CSR in emerging economies, while Section 3 builds on prior work and theoretical framing. The fourth section describes the data and methodology employed. Section 5 presents and explores the empirical data and Section 6 concludes the paper.

LITERATURE REVIEW

Corporate Social Responsibility in Emerging Economies

In recent times there has been enormous pressure on firms to shift from philanthropic CSR to a more holistic CSR that gives back equitably to societies, environment, communities including health and

safety of all, particularly in emerging economies like Angola, Nigeria, Sudan, and DR Congo (Visser, 2005; Pachauri, 2006; Belal and Momin, 2009; Wang et al., 2016). This call and obligation on companies have been due to the continual negative socio-economic and environmental impact of companies on emerging economies (WRI, 2005; UNDP, 2006; World Bank, 2006; IMF, 2006; Visser, 2009; Belal, et al., 2013; Jamali and Carroll, 2017). Ghana happens to be one of the world's leading emerging economies (IMF, 2019). In 2019, the International Monetary Fund recorded a growth rate of 8.8% in its World Economic Outlook on Ghana making Ghana the fastest growing emerging economy (IMF, 2019). This growth was attributed to the growth in the extractive industry (oil and gas, and mining). Hence, the influx of multinational extractive firms like AngloGold Ashanti and Tullow Oil Plc and their various levels of CSR contributions to the nation. For example, payments made by AngloGold in the form of taxes and royalties were USD 26,300,000 to the Government of Ghana in 2017 (AngloGold, 2017). Tullow Oil Plc on the other hand contributed USD 84,352,000 to Ghana's economy in the form of Value Added Tax, PAYE, Customs Duties, and Carried Interest (Tullow, 2017). The argument here is that these payments serve as an avenue for promoting CSR in the nation's extractive industry. However, it is also strongly contended that the payments above are in fulfillment of statutory duties, and therefore, the companies have an additional obligation to fulfill their social and environmental responsibilities to the communities within which they operate, due to their social and environmental impact (Cooper and Owen, 2007; Amponsah-Tawiah and Dartey-Baah, 2011; Amaeshi et al., 2016a; 2016b; Asare et al., 2021). This latter contention is one of the cardinal issues that necessitated this study, where we set out to ascertain the truth or otherwise if these extractive companies are fulfilling their social and environmental responsibilities to respective communities and the ensuing accountabilities thereof. We, therefore, investigate if the companies' CSR discharge accountabilities coincide with societal expectations.

Theoretical Framework

Corporate Social Responsibility and Accountability

Accountability relates to moral or institutional norms within which an agent is entitled to question, direct, sanction, or constrain the exercise of power by another (Macdonald, 2014). The demand for accountability has grown over the years with businesses under immense pressure to exhibit transparency leading to accountability in their actions to the societal and environmental actors (Cooper and Owen, 2007). These pressures are coming from, greater stakeholder awareness of corporate, ethical, social and environmental behaviour (Cooper and Owen, 2007; Ernst and Young, 2002). Accountability, therefore, happens when individuals and organisations report to a recognised authority and are held responsible for their actions (Edward and Hulme, 1996) and also involves taking responsibility for one's actions (Cornwall et al., 2000). Accountability, simply, is the duty to provide an account (for example, a CSR report) of those actions for which one is held responsible. For external parties, it serves as a tool to disclose activities in annual reports (Connolly and Hyndman, 2013). When there are no accountability mechanisms to ensure that organisations act responsibly, unethical behaviour and multiplicity of practices become the norm. For an effective discharge of functions, accountability is a necessary phenomenon. Thus, accountability serves as a check on the actions of individuals and institutions who have the responsibility (moral or legal) to discharge their functions. CSR accountability, therefore, gives a role to government and society to enable them to assess the performance of the organisation, thus, serving as a social control mechanism (Campbell, 2012). To be able to examine how CSR activities are manifested and the respective CSR accountability discharged in the extractive industry taking cognisance of the profusion of CSR practices, we explore the concept from the strategic accountability and the respective performance accountability viewpoints, borrowing from Dhannani and Connolly (2012) and Asare et al. (2021). While Dhannani and Connolly (2012) explored the concept from strategic, financial,

fiduciary, and procedural viewpoints within UK charities, Asare et al. (2021) explored the concept in terms of performance accountability and governance within the extractive industries in emerging economies. Strategic accountability is associated with an organisation's core purpose. Hence, related disclosure includes the organisation's vision and mission, activities and programs to achieve the intentions, and the results, that is, measuring the impact of organisation's actions and the extent to which the outcomes have been achieved (Keating and Frumkin, 2003; Asare et al., 2021). Considering the nature of CSR in developing economies (being philanthropic) (Ofori and Hinson, 2005), and dependent on the socio-economic environment within which a firm operates, the firms elect to act responsibly regarding their social and environmental responsibilities and periodically report to their stakeholders. This, according to Gray et al. (2006), constitutes a form of accountability, since the firms have chosen to take responsibility for the impact of their actions. However, the question still lingers on as to whether for example, the strategic CSR issues presented are discharged, thus, if the firms operationalise their CSR strategies, thereby walking the talk in a form of performance accountability (See Asare et al., 2021); hence the existence of some CSR initiatives which enable firms to be held accountable for their actions. Notable among the CSR initiatives include the Voluntary Principles on Security and Human Rights, which mandates firms in the extractive industry to commit to human rights standards for their operations (Voluntary Principles, 2010), the Extractive Industries Transparency Initiative, which allows companies to voluntarily disclose payments to governments (Extractive Industries Transparency Initiative, 2010). Based on the foregoing in the extant literature, we are of the view that the degree to which the CSR policies are implemented and reported (thus performance accountability) remains paramount. Since the extant literature posits that companies may use rhetoric and political inclusion to legitimise their activities, hence, they will present strategies but will fail to implement them, which underscores our decision to explore how CSR issues manifest and their respective discharge, thus the actual implementation on the ground. Based on

the foregoing, it is therefore paramount that we touch on the legitimacy theory and highlight how it explains our data subsequently.

Legitimacy Theory

Suchman (1995) defined legitimacy as a measure of society's attitude towards a firm and its activities. Lindblom (1993) mentioned legitimacy as a condition or status that exists when an entity's value system is on the same string as the value system of the major portion of society. Legitimacy theory is based on the premise that 'a social contract exists between a firm and society' (Suchman, 1995:574). Firms, therefore, endeavour to legitimise their activities to ensure goal congruence between them and the society (Ashford and Gibbs, 1990; Deegan, 2002; Frynas and Yamahaki, 2016). Legitimacy theorists (e.g., Deegan 2002; Deegan 2019) argue that companies use CSR as an effective means of changing the perceptions of stakeholders (see also Aribi, 2009). This is done to bridge the gap between stakeholders' perceptions of an organisation's social responsibility (O'Donovan, 2002). The information disclosed in the annual reports of the firm is used by management to send a message across to the public to accept management's view of the society and to correct a misconception the public might have about the environmental performance of the firm (Deegan, 2002; Deegan 2019). Hence, firms are more focused on gaining and repairing legitimacy in as much as maintaining it (Ashforth and Gibbs, 1990; Asare et al., 2021).

Due to the role legitimisation plays in the rationalisation of organisational actions and research, it has been seen and interpreted from different angles depending on the objective at stake (Deegan, 2019). For example, inter alia, Chelli et al. (2014) construe legitimisation as a tool for repairing damaged reputation, while both Islam and Deegan (2010) see it as an empowering tool in the hands of social actors to demand accountability and Lanis and Richardson (2013) understand it as a tool employed by social actors to enable them to meet their expectations from firms. However, we employ Asare et al. (2021) analogy which drew on Cho (2009) that construe legitimisation in three categories, thus, image enhancement, avoidance

and deflection, and disclaimer strategies (IES, ADS and DS respectively).

Legitimation Tools

By employing IES, companies want to align themselves with social values and environmental regulation, to attain and retain social licence that gives them credibility and relevance (Ashforth and Gibbs, 1990; Cho, 2009; Asare et al., 2021). In effect, they seek “self-aggrandisement”; where [they] institutions showcase their “prowess and accomplishments . . . in ways that are probably exhibitionistic and exaggerated,” (Brown, 1997, p. 659). However, the ADS notion involves companies attempting to establish social trust, confidence and the type of citizen-focussed image described by Ribot (2003). In this regard, companies draw public attention away from pressing social and environmental concerns (for example, spillages and pollution) and rather towards more trivial issues (Asare et al., 2021). Consequently, in the DS notion companies aim at legitimacy by repudiating well-established facts and denying responsibilities, thus avoiding accountability for incidents and behaviour that might cause significant reputational damage (Aribi, 2009; Campbell, 2008; Cho and Patten, 2007; Starbuck et al., 1978; Suchman, 1995). These legitimization strategies discussed here reflect the CSR discharge and accountability issues being explored in our current study, hence their respective applications in subsequent sections.

METHODOLOGY AND METHODS

Several studies (see Guthrie et al., 2004; Laughlin and Gray, 2014; Sandström, 2015; Dunstone et al., 2017; Egbon et al. 2018) have employed content analysis to examine the various phenomenon in both developed and developing countries. Others (e.g., Wanyama et al., 2013; Chanda et al., 2017) have used interviews to investigate critical governance issues in sub-Saharan Africa. The current study, however, employs both content analysis of firms’ sustainability reports and interviews with relevant civil society groups to

explore the phenomenon under investigation. Thus, examining how CSR activities manifest in the extractive industry and their respective discharge and accountabilities, which necessitated the research questions set out in section one.

Therefore, in addressing the research questions (first one), the study conducts Meaning Oriented Content Analysis (MOCA) on the 2018 sustainability reports of the selected mining/O&G firms (Anglo-Gold Ashanti and Tullow Plc) which is followed by series of interviews with relevant stakeholders to collect data in answering the second research questions.

Content Analysis Technique and Interviews

Content Analysis is a technique for gathering data that involves codifying qualitative and quantitative information into pre-defined categories to derive patterns in the presentation and reporting of information (Guthrie et al., 2004). It seeks to analyse information systematically, objectively, and reliably (Krippendorff, 1980; Guthrie and Parker, 1990; Guthrie, 1983). As characterised by Krippendorff (1980) content analysis is: “... a research technique for making replicable and valid inferences from data according to their context” (p. 21). Weber (1990) maintained that content analysis “classifies textual material, reducing it to more relevant, manageable bits of data” (p. 5).

The study specifically employs the MOCA in the analysis of Tullow Oil plc and AngloGold Ashanti’s 2018 sustainability reports due to its ability to explore the latent meaning of symbols and texts. We chose these two companies to represent the extractive industry, thus, whilst Tullow represents the oil sector, AngloGold represents the mining sector for the reasons adduced. Tullow is the leading upstream oil producer in Ghana, while AngloGold is amongst the leading mining companies in Ghana (Kastning, 2011; Asare et al., 2021). Both companies’ CSR activities, therefore, have the most significant effects in the industry, hence stakeholders are most interested in the CSR activities of these companies (Public Interest Accountability Committee (PIAC), 2011).

At the end of the MOCA process, the CSR accountability issues that emerged were reclassified under health and safety, community development and shared prosperity, and environmental stewardship and responsible operations. Subsequently, we proceeded with the interviews engaging the relevant community stakeholders (Media and Advocacy (MDA), Local Community Groups (LCG), Think Tanks (ITT), and Chiefs and Traditional Leaders (CTL)) for their respective views on the CSR manifestations and discharge in Table 1: Interviewee Demographics

the extractive industry. Thirteen interviews were performed which were mostly on phone (ten) and the rest (three) face-to-face observing all Covid 19 protocols. All ten phone interviews were recorded, while one out of the three face-to-face interviews were also recorded. The two face-to-face interviews that were not recorded were due to interviewees' concerns about anonymity issues. Tables 1 and 2 show interviewee demographics and codification respectively.

Stakeholder	Frequency	Percent
Local Community Groups (LCG)	2	27.27%
Media and Advocacy (MDA)	4	36.36%
Think Tanks (ITT)	5	18.18%
Chiefs and Traditional Leaders (CTL)	2	18.18%
Total	13	100.00%
Gender	Frequency	Percent
Male	8	63.63%
Female	5	36.36%
Total	13	100.00%
Job Position	Frequency	Percent
Managers	7	54.54%
Senior Managers	6	45.45%
Total	13	100.00%
Educational Level	Frequency	Percent
First Degree	5	36.36%
Second Degree	8	63.63%
Total	13	100.00%

The table details interviewees' stakeholder grouping, gender distribution, educational background, and job position

Table 2: Interviewee Codifications

Interviewee organization/classification	Number	Code
<i>Civil Society Groups (CSGs)/Think Tanks (TTN)</i>		
Africa Centre for Energy Policy (ACEP) – Top official	1	TTN 01
(Imani) Centre for Policy and Education – Top official	1	TTN 02
Integrated Social Development Centre – Senior policy analyst	1	TTN 03
Extractive Industry Transparency Initiative (EITI) – Senior advocate	1	TTN 04
Public Interest Accountability Committee (PIAC) – Senior advocate	1	TTN 05
<i>Media and Advocacy:</i>		
Journalist –journalist (1); Senior journalist (1)	2	MA01–02
Judicial system – Senior advocates (Policy)	2	MA03–04
<i>Local Community Groups (LCT):</i>	2	LCT01-02
<i>Chiefs and Traditional Leaders (CTL)</i>	2	CTL 01 -02

Note: This table details the 13 interviewees taking part in the study from March 2020 to July 2020 and the codes used to refer to each individual in the text.

The interviews lasted between 30 and 45 minutes in each case running from March 2020 to July 2020. In ensuring that the evidence was reviewed on a systematic basis, we transcribed the interview tapes and conducted an initial read-through to identify key themes. We scrutinised the transcripts for recurring text and language in an attempt to identify consistencies and incongruities. At the point of saturation, the interviewee's main concerns coalesced around the CSR manifestations previously identified, thus, health and safety, community development and shared prosperity and environmental stewardship and responsible operations. We, therefore, used these themes as bases for our analysis and discussion in the subsequent sections.

EMPIRICAL EVIDENCE, ANALYSIS, AND DISCUSSIONS

The section presents the empirical evidence from data collected, the analysis made, and discusses and interprets the findings to empirical evidence obtained based on the theoretical framework of the paper. This section is presented in two parts, thus, CSR manifestation and discharge in answering the first research question and society's expectation of the sustainable discharge of CSR, in answering the second research question.

Manifestation and Discharge of CSR

Asif and Fisscher (2013) consider CSR as a tool used by organisations to make corporate practices more transparent and socially responsible. This implies that CSR practices should be incorporated at all levels of a company. We, therefore, present evidence from Anglo-Gold Ashanti and Tullow. In the case of AngloGold Ashanti, CSR is manifested in the following areas: safety, health, environment, government and community. While for Tullow Oil, CSR is manifested in the following ways: Shared prosperity, environmental stewardship, and responsible operations. We, therefore, reclassify and discuss these manifestations under health and safety, community development and shared prosperity and environmental stewardship and responsible operations as set out in Tables 3 and 4 below.

Table 3: AngloGold Ashanti CSR Manifestations

Areas of Focus	Manifestations
Safety	Embedding and integrating safety into the business
	Risk management to drive workplaces free of harm
	Enabling safe operations through line management Critical control modelling for next generation
Health	Strengthening organisational capability and health risk management to eliminate occupational exposures above set limits.
	Company health initiatives to optimise fitness for work
Environment	Community health initiatives- strengthening health systems; responding to epidemics
	Risk management to drive zero harm – elimination of harmful discharges
	Leveraging our position in land and water as a catalyst to create value beyond our traditional scope of influence
	Driving integrated closure management across the mining cycle
Community Development	Communities – strengthening institutional capacity, establishing strong partnerships and creating alternative industries

Table 3 gives a summary of the way CSR is manifested in the case of AngloGold Ashanti in its Sustainable Development Report. Source: (AngloGold Ashanti Sustainable Development Report, 2018)

Table 4: Tullow's CSR Manifestations

Areas of focus	CSR Manifestation Areas	Strategic Issues
Shared Prosperity	Local Content and Capacity	Creating meaningful and enriching business opportunities
	Developing Local Skills	Supporting education and skills development
	Social Investment	Investing in shared infrastructure and logistics
Environmental Stewardship	Climate Resilience	N/A
	Ecosystems	Review and improve its environmental and social impact assessment
Responsible Operations	Safety and Wellness	Commitment to ensuring the safety of colleagues and host communities
	Responsible Production	Reducing major safety hazards

Table 4 gives a summary of the way CSR is manifested in the case of Tullow in its Annual Report. Source: (Tullow Oil Plc, Annual Report 2018)

Following these CSR manifestations, we discuss how CSR is discharged by these firms in the extractive industry.

Discharge of CSR Activities

We discuss the discharge of CSR in the extractive industry based on the manifestations indicated above. In the course of the discussions, we delve deeper to ascertain why the firms discharge CSR the way they do. Further, to have a holistic picture of the entire CSR activities with respect to the

viewpoints of all the actors within the extractive industry, we engage the citizens for their respective views on the CSR accountability approach within the extractive industry. In this manner, we collected data and analysed them to answer the two research questions that necessitated the study. This is done in line with Bouten et al. (2011) who opine that companies should not only report their strategic intentions and policies but also ensure respective discharge and consequent reporting of their entire CSR responsibilities to ensure a holistic and

sustainable CSR accountability. We, therefore, present and discuss our findings as set out below.

Safety and Health

Safety and health issues have gained prominence and are used to assess CSR performance in organisations (Sowden and Sinha, 2005). Such information in the CSR report is what motivates and enables employees to raise productivity and follow better safety practices. For AngloGold, the safety of its employees is a material issue, and it was reported as follows:

Employee safety in AngloGold was ranked as the most significant material issue facing AngloGold Ashanti in 2018. Notwithstanding the progressive improvements seen in the company's safety performance over the year, we recognise that as a company, we will continue to be defined by our ability to protect employees from injury and harm (AngloGold Sustainable Development Report, 2018, p.23).

As part of achieving its strategic goals, AngloGold intended to embed and integrate safety into their business, implement risk management to drive workplaces free of harm, and enable safe operations through line management critical control modelling for the next generation. Some of the safety practices undertaken by the firm included establishing a multi-disciplinary Technical Standards Committee, with oversight over the development and review of safety-related standards, monitoring compliance with existing critical controls for fatal risk hazards, and monitoring, evaluating, and reporting with effective governance.

However, with all these practices in existence, the firm recorded some fatalities despite the move to improve its safety practices which it indicated in its report as follows:

Sadly, in the first four months of the year, the company experienced three fatal injuries. Two of these occurred in South Africa and one at the international

operations in Brazil. We remain committed to achieving our objective of zero fatalities.

Further, they indicated that:

Reporting of high potential incidents continues to heighten awareness, facilitate organisational learning and effect more robust controls (AngloGold Sustainable Development Report, 2018, p.27).

The above is suggestive of AngloGold's commitment towards safety and health issues internally. In our investigations, we found evidence of the demonstration of performance in the area of safety and health towards employees beyond the mere mention of intents, goals and objectives of AngloGold, which is commendable. This is an indication of the move beyond strategy formulation to implementation and actual performance and accountability on employee health and safety.

We noticed during our content analysis that AngloGold disclosed bad news in its accountability to the stakeholders which is commendable. This is because extant literature posits that companies usually tend to conceal bad news and only report good news in their accountability to their stakeholders to present themselves in a positive light to the public, which is a strong legitimization mechanism in practice under IESs (Gray et al., 1995). In this regard, Aribi (2009, p. 116) argued that:

Companies might avoid disclosing bad or negative news in their reports since such information is not favourable to their corporate reputation and therefore may reduce the company's profit or its capital market.

In this respect, AngloGold has shown lots of courage and responsible accountability for not concealing the bad news, but rather reporting it and taking responsibility. This is the kind of reporting that leads to sustainable CSR accountability that radiates stakeholder confidence and trust in companies.

Similarly, Tullow also adduced high importance to employee safety and health in their CSR discharge and accountability as indicated below:

We are committed to ensuring our colleagues and host communities are kept safe and well, and to raising awareness of potential dangers related to our operations and the locations where we operate. All of Tullow's colleagues have access to private healthcare and we aim to achieve top quartile industry performance on our occupational safety measures. We also protect our colleagues and assets with robust emergency plans (Tullow Oil Plc Annual Report, 2018, p.43).

Tullow demonstrated their commitment to the above with evidence as shown below:

Our occupational health performance in the prevention of malaria cases for non-immune personnel continued to remain strong with zero malaria (serious) cases being recorded in 2018. The Company is committed to improving employee health, wellbeing and resilience in the workplace, and a new employee wellbeing and resilience programme was introduced in the latter part of 2018 (Tullow Oil Plc Annual Report, 2018, p.43)

Likewise, they indicated

Major accident hazards represent a material risk to Tullow. To address this, process safety management policies, standards and plans are applied to all drilling and production activities. They are incorporated in planning and decision making throughout the project life cycle, from concept selection, design and construction through to commissioning, operations, modifications and decommissioning (Tullow Oil Plc Annual Report, 2018, p.43).

In this manner, Tullow has also demonstrated safety and health performance accountability beyond just the strategic formulation of policies and intents, which is commendable.

Community Development and Shared Prosperity

According to Carroll (1979), managers and employees need to participate in voluntary and charitable activities within their local communities, especially in projects that enhance a community's quality of life. Carroll (1979) maintains that successfully implemented CSR programs on community development promote growth, reduce poverty, and offer financial benefits to the members of society. In our content analysis (MOCA) of Tullow and AngloGold's Sustainability reports, we, therefore, probed deeper beyond the manifest contents to unveil the latent meaning lurking behind the issues (See also Duriau et al., 2007; Krippendorff, 2013). Their reports indicated that they are committed to the development of their host communities through the provision of job opportunities and the construction of infrastructure. Below are extracts to summarise our findings:

For AngloGold,

In 2018, the program is estimated to have covered over a million structures, protecting around 1 million people, and creating some 1,300 job opportunities in the communities involved (AngloGold Sustainable Development Report, 2018, p.33).

For Tullow Oil Plc,

In 2018, Tullow committed \$10 million to building school infrastructure for Senior High Schools (SHS) in Ghana over five years, making an annual contribution of \$2 million over this period (Tullow Oil Plc, Annual Report, p.41)

Although Tullow and AngloGold indicated that they took initiatives towards community development, our interviews with the community and society, confirmed that there was a lack of community engagements before the firms embarking on these projects. Various community stakeholders maintain that the decisions of the firms were unilateral and therefore void of prior

stakeholder engagements. The community stakeholders, therefore, explained that their needs and expectations within the normal CSR scope from the firms were far beyond what the firms provided. They, therefore, explained that they are highly disappointed in the firms since these firms make supernormal profits from the society and community's resources but fail to at least fulfill their minimum CSR. They, therefore, maintained that the CSR accountability from these firms is superficial, void and only meant for self-aggrandisement and image enhancement purposes. Below are extracts from the interviewees that provide summaries of the substantive issues at stake:

The companies claim that there are significant community developments preceded by community engagements, now tell me where you can find actual community developments. They build those tiny village structures called schools and hospitals. Okay, how much money have they made from our resources? The least said about them the better...and they make a public show of things that do not matter (LCG 02).

Similarly, CTL 01 explained:

These companies deprive us of our lands, what do we get in return? Nothing close to what they take from us, it's a shame.

TTN 02 continued:

...so, the firms are saying they created jobs for us, fine. How many of our people are at the strategic decision-making level? Don't they make the money and repatriate everything to their countries? ...and our leaders are saying nothing....well.

The rest of the respondents commented in similar tones, which is suggestive of the fact that the extractive companies are rather cunningly rendering selective accountability just to maintain their legitimacy status with the people and to maintain their global corporate image. The evidence above is also suggestive of the fact that the CSR practices of the firms are philanthropic and geared towards enhancing corporate reputation due to the image enhancement strategies employed

in line with Cho (2009) and Asare et al. (2021). In this respect, CSR accountability is nothing but superficial, void and exploitative.

Environmental Stewardship and Responsible Operations

Environmental stewardship and responsible operations have been a paramount issue in the CSR and sustainability discourse over decades. It has been argued that the move towards a sustainable CSR accountability regime will be difficult to achieve without a prime focus on environmental stewardship and responsible operations (Cooper and Owen, 2007; Lauwo et al., 2016; 2019). However, rather than focusing on best practices to achieve environmental stewardship and responsible operations in the discharge of CSR, extractive firms most often than not resort to CSR as a legitimization tool to manage community relations and to maintain their social license to operate (Asare et al., 2021). Extractive companies are characterised by high social visibility which compels the firms to take a strategic approach to CSR. Firms, therefore, in trying to remain in the limelight and keeping a positive image of themselves in their Environmental stewardship and responsible operations (CSR discharge) employ a wide range of legitimization strategies including image enhancement strategies, avoidance and deflection strategies and disclaimer strategies (Asare et al., 2021). One of these strategies as explained by Asare et al. (2021) is the establishing/and extending of image enhancement strategies in situations where the firm wants to establish legitimacy to maintain its social license to operate. We identified instances in the reports where the firms had intentions and policies to contribute to the well-being of employees, the environment, society, government, the community, and to operate responsibly. However, further scrutiny of their reports showed that these good intentions never materialised but remained on paper within the strategic accountability context. In this respect, the firms only established intents and strategies that were never operationalised. Below are some extracts from the empirical analysis to support the above:

For AngloGold, some of the statements were as follows:

We want the communities and societies in which we operate to be better off for AngloGold Ashanti having been there (AngloGold Sustainable Development Report, 2018, p.1)

We treat each other with dignity and respect (AngloGold Sustainable Development Report, 2018, p.1)

We respect the environment (AngloGold Sustainable Development Report, 2018, p.1)

Similarly, Tullow Oil Plc indicated that:

In 2018, Tullow undertook a series of benchmarking exercises to assess and review its position regarding climate change. The results of this analysis have been communicated and discussed with the Executive Team, and we are now working on a set of plans that will continually improve both our operational performance and transparency in this area (Tullow Oil Plc Annual Report, 2018, p.42)

Tullow continues to review and improve its Environmental and Social Impact Assessment (ESIA) work and uphold its stated commitment to not undertake operations in World Heritage Sites, in addition to robust screening of potential new projects against Protected Area Guidelines (Tullow Oil Plc Annual Report, 2018, p.42)

Having established the above, we probed further into the respective firms' sustainability reports for further evidence of the actual operationalisation and respective functional accountabilities on these issues. Thus, we sought further evidence into these statements above and how they were operationalised. Though we found no further evidence of respective performance, we are of the view that Tullow has demonstrated commitment to environmental stewardship and responsible operations. We, therefore, proceeded on this basis to inquire from the public stakeholders their views on the substantive issue under investigation.

Our conversations with the society indicated otherwise, thus, the practice of superficial and rhetoric CSR by these firms with the view to keep themselves and images in a positive light was imminent. In the interviews, we asked the society members to confirm the statements from AngloGold's Sustainable Development Report, 2018, p.1 and Tullow Oil plc's. Annual Report, 2018, p.42.

The extracts below summarise their responses:

....look at the level of land degradation, it's pathetic and heart-breaking, honestly, I can't come to terms with it....My God [being emotional]. Meanwhile, the extractive firms paint positive pictures about the environment, and they also state that they are environmentally responsible and friendly? They rather choose what they want to report, they think we're not aware (ITTN 04).

These extractive companies have occupied our farming lands and fishing areas, hence depriving us of our normal way of life. However, the compensations they give is woefully not proportionate to what they take from us. Meanwhile, they talk about treating us with dignity and respect, this is not true....not to talk about their selective reporting (LCG 01).

My brother, we would have been better off without these mining companies, since all they do is exploiting and degrading our land...and when they finish, they select what story to tell. We should rather have kept the minerals in the belly of the earth, and now the oil companies have also come.... hmmm, double agony (MDA 03).

The rest of the interviewees also responded along these lines as above which confirms the fact that these extractive companies although may have good strategic intentions and objectives for CSR, these intentions and objectives are not fully operationalised as expected by the public. The interviewees' responses, therefore, indicate that the companies tend to engage in rhetoric CSR and

selective accountability by crafting crafty reports to suggest that all is well in the industry, but then the reverse is rather the case.

SUMMARY CONTRIBUTIONS, AND IMPLICATIONS

The paper examined how CSR activities are manifested and the respective CSR accountabilities discharged in the extractives industry, which necessitated the following research questions.

- How are CSR activities manifested and discharged in the extractive industry?
- How has society's expectations been, regarding the sustainable discharge of CSR?

We answered these research questions by collecting data using the MOCA of respective firms' sustainability reports and corroborate the outcome with interviews with relevant stakeholders. First, we performed a MOCA on the sustainability reports of Tullow and AngloGold to ascertain how CSR activities manifest, delving deep into the respective issues to ascertain the CSR accountability discharge of these companies that represent the extractive industry. In this manner, we were able to collect data to answer our first research question. We proceeded with interviews with relevant public stakeholders on the respective CSR manifestations for corroborative evidence of the issues identified from the MOCA of the firms' sustainability reports, hence answering our second research question.

Our study unveiled that CSR in the extractive industry manifests in various forms particularly, in Safety and health, community development and shared prosperity, environmental stewardship and responsible operations. The investigations found contrasting views on all counts of the CSR accountability discharged between the extractive companies and the public. Thus, whilst the extractive companies maintain that they have discharged CSR creditably and fulfilled their obligations, the society, however, argued that the CSR discharge and accountability of the extractive companies are superficial, void and meaningless to them. This is because the public lamented that the firms did not operationalise their stated CSR policies targeted towards them and the environment in the manner that they said they will.

Rather, they only cosmetically practiced their CSR activities just to set themselves in a positive light and to gain the social license to operate. In this manner, the CSR practiced is nothing less than philanthropic and geared towards enhancing corporate reputation and visibility by any means possible.

We, therefore, argue that companies should not only report their strategic intentions and policies but also ensure respective discharge and consequent reporting of their entire CSR responsibilities for a holistic and sustainable CSR accountability.

We contribute to the CSR literature by specifically focusing on how CSR activities manifest and their respective accountability discharge in the extractives industry. The problem of CSR is broad and varied. While previous studies have approached the problem from a unidimensional methodological viewpoint, thus, either through interviews, questionnaires or content analysis (See (Akpan, 2006; Amponsah-Tawiah and Dartey-Baah, 2011; Amaeshi et al., 2016; Egbon et al., 2018)), we approached the problem from a multidimensional methodological viewpoint, using both content analysis and interviews, while corroborating our evidence from the companies with evidence from relevant public stakeholders in an emerging economy. In this respect, our study adds another dimension to the existing CSR literature on emerging economies and provides useful information and a reference point to industry on their CSR accountability strategies and subsequent implementation.

Based on our findings, which indicate a sharp contrast between the extractive firms CSR accountability accounts and the public's account, we advocate for a more pragmatic CSR order and further research in the extractive industry, particularly, in developing economies, that will delve deeper and wider into the inconsistency of the results from the companies and the public. We believe that further studies should be able to lay the issue to rest, whether the extractive companies practice what they preach and 'walk the talk'.

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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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