Green Buyer-Supplier Relationship and their Role in Supporting Cocoa Supply Chain Sustainability in Ghana

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Abstract
Several studies in sustainability have been conducted in sectors such as manufacturing, service and clothing. However, little work has been done in agriculture specifically in the cocoa industry. Thus, this paper provides an exposé on the supply chain sustainability in the cocoa industry. Prior studies on supply chain sustainability were reviewed and hypotheses formulated on the relationships between trust, commitment, governance and green buyer-supplier relationships and sustainability. The study concludes that green buyer-supplier relationship is essential especially in the cocoa industry.

Keywords: Green buyer-supplier relationships; cocoa; supply chain sustainability.

Introduction
One of the most attractive topics for researchers and practitioners in the supply chain domain is agricultural supply chains, and supply chain sustainability in agriculture has presently been recognized as an interesting topic in the policy field, globally (Mdee et al., 2018; Passeri et al., 2016).

For many years now, a lot of papers found in the management literature deals with how supply chains will be sustainable, however most of the papers are coming from researchers from Europe, some regions in Asia and the U.S. (Fahimnia, Sarkis, & Davarzani, 2015), meanwhile, sustainability studies among developing countries such as Ghana is far behind research for sustainability in developed countries.

Most studies in supply chain sustainability have been done in sectors such as Manufacturing (Cheng & Sheu, 2012; Govindan, Khodaverdi, & Jafarian, 2013; Large & Gimenez Thomsen, 2011; Lee, 2008), Service (Couto, Tiago, Gil, Tiago, & Faria, 2016; Oruezabala & Rico, 2012; Poulsen, Ponte, & Lister, 2016; Tate, Ellram, & Dooley, 2012; Tidy, Wang, & Hall, 2016) and Clothing (Anisul, Nur, & Klassen, 2016) but little work has been done in agriculture, especially in the cocoa industry. In addition, developing countries have seen little research on supply chain sustainability from both the supplier’s and the buyer’s relationship perspectives in the supply chain, even though sustainability is a topic of international interest (Jia, Zhuaha-cardona, Bailey, & Rueda, 2018).

Recent studies have found that, when focal companies have robust relationship with their suppliers, they most likely enjoy top and sustainable performance in the supply chain (Amoako-gyampah, Gyasi, Adaku, & Famiyeh, 2019; Gimenez, Van Der Vaart, & Van Donk, 1108; Jabbour & Jabbour, 2009; Maestrini et al., 2018; Mena, Hult, Ferrell, & Zhang, 2019; Reuter, Foerstl, & Blome, 2010). also, suppliers in the relationship are the true representatives of sustainability (D. Kannan, De Sousa Jabbour, & Jabbour, 2014; WCF, 2015). With that being said, a well-planned buyer-supplier relationship eventually leads to improve risk management coupled with collaborative learning and sustainability among firms (Hartmann & Moeller, 2014; Jose et al., 2015; V Mani et al., 2016; Neumüller, Lasch, Kellner, Neumüller, & Lasch, 2016; Paulraj, 2011).

Sustainability is a strategy (Kramer, 2006) which most organizations use in gaining competitive advantage and increases their market share. Again, sustainability enables firms to reap premium price from the market (Crowder & Reganold, 2015; Rueda, Garrett, & Lambin, 2017). Sustainability worries have grown and gained good standing among firms and their stakeholders globally (Freitas et al., 2017). The cocoa industry in the agriculture sector is a critical area to consider sustainability in their supply chain, because sustainable supply of cocoa in the world is foreseen to be a huge problem (Gateau-Rey, Tanner, Raspidel, Marelli, & Royaert, 2018; Laven, 2010; Mithöfer et al., 2017), coupling with that, Cocoa is a key raw material for chocolate production which cannot be replaced with anything (Ho, Zhao, & Fleet, 2015; Krahmer et al., 2015). A study conducted by (Bag & Gupta, 2017) suggested that demand for cocoa is expected to rise by 30% by the year 2020. However, the last decade has seen a yearly decline in Ghana’s cocoa production (Elvis Dartey Okoffo, Mensah, & Fosu-Mensah, 2016) which is a top-quality cocoa among all the producing countries in the world.

With that being said, the cocoa supply chain Sustainability cannot be achieved without addressing buyer-supplier relationship issues. Earlier in this work, it has been said that suppliers are the true representative of sustainability in the supply chain (D. Kannan et al., 2014; WCF, 2015). Even though relationship between buyer and supplier do vary, that is to say, some relationship can bring frustration to any of the partners involved (Hibbard, Brunel, Dant, & Iacobucci, 2001). Some relationship can also create risk for the buyer and also increase cost for the supplier (Hammerschmidt, Wetzel, & Arnold, 2018; Marcos & Prior, 2017; Musalem, André, 2019). However, many scholars have looked into buyer-supplier relationship in recent few years and they are of the view that buyer-supplier relationship ranks one of the best resources for improving sustainable competitive
advantage (Lambe, Spekman, & Hunt, 2002; Yang Liu, Zhu, & Seuring, 2017; Mülling, Land, Seuring, & Felipe, 2018). In addition, (Dubey, Rameshwar, Surajit Bag, 2014) and (Turkkantos, 2013) claimed that, one of the most key sustainable elements in integrating supply chain sustainability is buyer and supplier relationship. Likewise, green or sustaining the relationship between the buyer and the supplier, plays a vital role in enhancing sustainability of the supply chain (Kumar & Rahman, 2016; Kumar, Scholar, & Associate, 2015; Venkatesh Mani, Gunasekaran, & Delgado, 2018; Talay, Oxborrow, & Brindlely, 2018).

Hence, making studies into the sustainability issues in Ghana’s cocoa supply chain by studying sustainable or green buyer-supplier relationship is worth researching. Most firms use sustainability instruments as a form of strategic corporate social responsibility to gain competitive advantage and expand their market share (Kramer, 2006; Lloret, 2016). Notably, Sustainability is progressively seen as a quality attribute to enable organizations to reap premium price from the market (Crowder & Reganold, 2015) of which the cocoa supply chain sustainability cannot be left out.

Therefore, it is important to consider supply chain sustainability a worldwide goal for every industry (Calvo-amodio & Martinez, 2017; Nilsson-lindén, Baumann, Rosén, & Diedrich, 2018; H.-C. Wu, Cheng, Chen, & Hong, 2018), agriculture sustainable development is a vital area of research because of the important role sustainable agriculture plays in providing raw materials for industry, income, employment, food and resources for most poor people(Ingram, Rijn, Waarts, & Gilhuis, 2018; Wang, Wang, Zhang, & Zhao, 2018).

The cocoa sector of Ghana continues to be a very essential support for the country’s economic development (Amankwah-amoa, Debrah, & Nuertey, 2018; Debrah, 2010), cocoa is the country’s leading export and foreign exchange earner. The sustainability in the cocoa supply chain begun to be endangered as well as the superior quality of cocoa produce in Ghana (Amankwah-amoa et al., 2018; Bansong, Nguyen, & Bosch, 2016). The world demand for cocoa increases every year by 2 to 3% meanwhile, Ghana contributes more than 20% of the world’s total produce (Wessel & Quist-Wessel, 2015). Concurrently, Cocoa is a prime agriculture export and a major contributor to Ghana’s economy (Deans, Ros-Tonen, & Derkyi, 2018; Kolavalli & Vigneri, 2011). Even though Ghana has recently discovered oil yet, its cocoa industry remains a pillar in economic development, Cocoa is the leading foreign earner for the country (Deans et al., 2018; Kolavalli & Vigneri, 2011). Recent studies found that, irrespective of Ghana’s large input of cocoa to the world market, the average production is still little, about 400kg/ha, which is among the least in the world (Asare, Markussen, Asare, Anim-Kwapong, & Riebild, 2018) With that being said, cocoa production and cocoa productivity in Ghana has seen yearly decline and fluctuations in the average produce over the last decade (Elvis D Okoffo, Fosu-mensah, & Gordon, 2016).

Some researchers have looked at the issues from the view point of soil fertility and diseases affecting cocoa (Boecx & Walle, 2018), weaknesses of regulatory institutions (Amankwah-amoa et al., 2018). However, this study will look at green buyer-supplier relationship (GBSR) and their role in supporting cocoa supply chain sustainability in Ghana. Meanwhile, a theoretical perspective is important to suspects the variables understudy. Therefore, to examine the relationship between GBSR and their role in supply chain sustainability in Ghana’s cocoa industry, the researcher will adopt social exchange theory (SET) and the resource-based theory (RBT) also known as resource-based view. scholars like (Carter, Rogers, Carter, & Rogers, 2008) and (Pagell & Wasserman, 2010) have used these theories in analyzing sustainable supply chain management

**Literature review (Arial 10, Bold – Main headings)**

**Supply Chain Sustainability**

Many studies have been found dealing with sustainable supply chains in the management literature and most of these researches were done in USA, Europe and some parts of Asia (Fahimnia et al., 2015; Jia et al., 2018). However, developing countries have seen little research on sustainable supply chain especially from buyers and supplier’s relationship view point (Jia et al., 2018; Lester R. Brown, Edward CWolf, Linda Starke, 1987; Yang Liu et al., 2017) and probably far from the cocoa industry. The word, sustainability is created from the French word Soutenir, which means ‘to hold up or support’ (Lester R. Brown, Edward C Wolf, Linda Starke, 1987). It is almost certain that now sustainability is being progressively added to both the plans of policy makers and strategies of most firms.

Carter et al. (2008) defined sustainable supply chain management as openness and strategic way of achieving a firm’s environmental, economic and social goals in an organized coordination of the main inter-firm business processes for enhancing the long-term economic performance of the individual firm and it supply chain. Therefore, sustainable product can only be delivered by sustainable supply chain (Bals & Tate, 2018; Esfahbodi, Zhang, Watson, & Zhang, 2017).

Previous research has shown that, a lot of studies on sustainability in the context of business is directed towards supply chain (Aboelmaged, 2018; Carter et al., 2008; Gast, Gundolf, & Cesinger, 2017). Seuring & Mu (2008) explained sustainable supply chain to be managing information, materials and the flow of capital including cooperation among organizations along the supply chain while focusing on environmental, social and economic dimensions of sustainable development.

The aforementioned definitions have stirred up a lot of scholars to research into supply chain using the three dimensions of sustainability with emphasis on the need for collaboration among partners in the supply chain. (Elkington, 1994) grouped, sustainable supply chain into three, such as economic supply chain, social supply chain and environmental supply chain.

**Economic supply chain**

This helps an organization to deliver on time and at the best quality with minimum cost. It also involves minimum quality base rejection and making maximum use of your assets (Valentina Carbone, 2011), both tangible and intangible. Many organizations do adopt sustainability practices due to the numerous benefits that comes with it (Vachon & Klassen, 2008; Zhu, Dou, & Sarkis, 2010) others also adopt sustainability practices due to external pressure (Nakano & Hiro, 2011) The pressure applied on organizations normally comes in the form of penalties, fear of losing business and destruction of reputation (Kumar et al., 2015)

**Social sustainability**

Many scholars have used social sustainability pointers to explain social sustainability for instance, (Cramer, 2008) came up with a model where corporate social responsibility indicators were used to measure social sustainability. Some of the dimensions considered under social sustainability includes; fair trade and transparency (Ni, Li, & Tang, 2010; Pullman & Dillard, 2010), safety (Ni et al., 2010; Pullman & Dillard, 2010), Health (Eltayeb, Zailani, & Ramayah, 2011; Pullman & Dillard, 2010), poverty reduction (Ni et al., 2010), education (Closs, Speier, & Meacham, 2011), fair earnings (Ashby et al., 2012; Rocha, Searcy, & Karapetovic, 2007). Most of the cocoa supply chain sustainability challenges have been hanging mostly on social sustainability.

**Environmental supply chain**

This comprises of activities or events that influences the environment (Alan, Kuzey, Acar, & Açığöz, 2016). Previous literature has discussed some of these activities or events including, Pollution and emission minimization (Bai, Dhavale, & Sarkis, 2016; Vachon & Klassen, 2008), waste minimization (Carter et al., 2008; Z. Wu & Pagell, 2011). Significant evidence has shown that, sustainability in supply chain has helped firms to obtain better performance (Luthra, Garg, & Halseem, 2015; Yusu et al., 2013), in addition supply chain sustainability is progressively seen as a quality attribute to enable organizations to reap premium price from the market(Crowder & Reganold, 2015).
Theoretical Background

To analyze the relationship between green buyer-supplier relationship (GBSR) and their role in supply chain sustainability, the researcher will adopt social exchange theory (SET) and the resource-based theory (RBT) also known as resource-based view. Convincingly, scholars like (Carter et al., 2008; Z. Wu & Pagell, 2011) have used these theories in analyzing sustainable supply chain management.

According to the RBT, rare, valuable and difficult to imitate resources and capabilities can make available important sources of sustainable competitive advantage (Barney, 1991). According to (Hart, 1995), green challenges may cause the development of intangible resources to handle these challenges. However, these intangibles can be the bases for improvements in sustainable performance which can also lead to competitive advantage (Carter et al., 2008) found that intangible resources such as the knowledge or information acquired in managing the buyer and supplier relationship in working collaboratively to improve sustainable performance can be viewed as a resource that is rare, valuable and difficult to imitate (Barney, 1991) and these resources, such as governance, information sharing, supplier development strategies which are difficult to imitate can lead to improvement in supply chain sustainability. For Pagell et al. (2010), the capability of management to establish collaborative relationship to increase sustainability is an important asset that leads to sustainable competitive advantage in building sustainable and profitable supply chains.

The social exchange theory (SET) originated from sociology (Emerson, 2008), it maintains that individuals or groups work together for a reward or expecting to receive a reward as they work together with other people (Emerson, 2008). SET is of the view that the motivation for working together is the expectation of rewards and not punishment (Bandura, 1986) for that matter SET claims that attitude and behaviour are determined by the reward of working together with the exemption of the cost of that interaction (Griffith, Harvey, & Lusch, 2006).

For instance, in green buyer-supplier relationship context, a supplier supplies high quality cocoa beans to its buyers through its supply chain management procedures and the expectation of the supplier is that the buyer must reciprocate with a better response by meeting the needs of the supplier after the buyer received a treasured contribution from the supplier. That is to say, in order to accomplish sustainable or green buyer-supplier relationship, the expectations of the participants in the relationship must be fulfilled (Meena & Sarmah, 2012) without compromising the future expectations for the relationship. The underlying basis of social exchange theory is that trust and commitment is important in ensuring relationship accomplishments (Hunt, 1994; Yi Liu, Luo, & Liu, 2009).

This research combines frequently used factors from cocoa such as trust and governance and factors from manufacturing such as, commitment, Green supplier development, Green collaboration and information sharing/communication as the factors for the study. The term green is used by Bag et al. (2016), to refer to genuine commitment to sustainability.

Hypotheses

Trust

Trust can be explained as a partner believing that the other partner is reliable and will do things in the best interest of both parties even when there are no lay down rules governing their relationship (Baker, Simpson, & Sigiu, 1999). Trust is vital in the buyer supplier relationship because it determines the investment the parties will make in the relationship (Zheng & Xu, 2016) however, when there is doubt or uncertainty in the relationship between the buyer and the supplier, there will not be commitment to sustainability. Trust between the buyer-supplier relationship leads to sustainability (Jury Gualandris, 2016; Kannan & Choon Tan, 2006; Roca-puig, 2019) in the supply chain. We are of the view that a partner in a relationship will be committed to sustainability when they perceived that their partners can be trusted and honest, and perfect trust will lead to commitment to sustainability (Bag, 2016), therefore, the first hypothesis is proposed.

Hypothesis 1: Trust between a buyer and a supplier will lead to commitment to sustainability.

Commitment

According to Morgan and Hunt (1994), we describe commitment to the relationship as an exchange partner having confident that an ongoing relationship with a partner is very important as to merit maximum efforts in maintaining it (Moorman, Deshpande, & Zaltman, 2013), it pre-supposes that commitment is a vital element in the growth and maintenance of relationships (Kingshott, 2006) which eventually stabilize and sustains the business. In social exchange theory, commitment is a chief occupant that produces a higher level of dependence and when the supplier can highly depend on the buyer and vice versa, it will however lead to sustainability of the supply chain. This leads to the next hypothesis.

Hypothesis 2: commitment has a positive relationship with sustainability of the cocoa SC

Governance

Governance is key for the buyer-supplier relationships to be stabilized (Carr & Pearson, 1999), and it deals with the official and unofficial rules of exchange relationships and systems governing the conduct of participants in an inter firm collaboration (Vandaele, Rangarajan, & Gemmel, 2007) for instance, the relationship between the buyer and supplier.

However, governance have influence on trust and commitment with much research exploring these factors (Autry & Golisic, 2010) the union between the buyer and the supplier involves certain governance for proper coordination. However, the buyer and supplier relationship can bring a lot of rewards (Dyer, 1997; Lawson, Petersen, Cousins, & Handfield, 2009) but the actual collaboration between the partners demands coordination and control by association governance (see Dyer, 1997). Findings from (Cai, 2008) suggested that, when a buyer and supplier work within the requirement of their relationship, it leads to an improvement in the rules that governed them. Therefore, it is almost certain that the business of the day would be sustained when there is an improvement in the governance of the relationship. This leads us to the next hypothesis.

Hypothesis 3: Governance has a positive relationship with sustainability of the cocoa SC

Green Collaboration

Green is genuine commitment to sustainability (Bag et al., 2016) and collaboration can be explained as joint or reciprocated commitment to common goals and sustainable performances (Lo, Liou, Wang, & T sai, 2018). Therefore, green collaboration can probably be explained as relating and committing sustainability practices to collaboration. The practices of collaborative supply chain are inflexibly established as the best and right way for effective and sustainable business (Attaran & Attaran, 2007). Supply chain sustainability and performance depends substantially on collaboration (Huang, Yen, & Liu, 2018). studies have shown that collaboration in supply chain can add about three percent to profit margins for all categories of supply chain participants (Jr. Wempe, & Swink, 2019). According to (Akamp & Müller, 2013), collaborative activities involves supplier development and this relate positively to supplier performance in sustaining the supply chain. A lot of organizations have admitted the importance of working in collaboration with partners in the supply chain to achieve business sustainability (Ashby et al., 2012). Hence the third hypothesis.

Hypothesis 4: collaboration has a positive relationship with sustainability of the cocoa SC
Green Supplier Development
Supply development can be described as giving support to the supplier through training, financing, knowledge and sharing of technology (Simpson and Power, 2005; Seuring and Muller, 2008). Therefore, green supplier development can best be explained as relating and committing sustainability (Bag, 2016) practices to supplier development. Likewise, there are countless approaches to supplier development including conducting of seminars for suppliers, visiting their sites or societies to see their working environment and to identify what must be improved, building teams made up of buyer and supplier representatives and so on (see Bommel, 2010; Simpson and Power, 2005).

A possible explanation of the definition is that, in the cocoa supply chain, the supplier (farmer) can be supported through training on proper and right use of agro-chemicals, financing, sharing of knowledge through cocoa extension officers, organizing farmers into cooperative groups and developing a proper national farmer database by the use of information technology and conducting seminars to train farmers to be abreast with technology and its importance to agriculture business sustainability. Moreover, Liu et al. (2017) supply development is seen as a huge critically important when organizations wants to improve sustainability. Evidence from previous studies also suggest that, sustainable supplier development has a positive impact on the sustainability of the supply chain (Awasthi & Kannan, 2016). This leads to the next hypothesis.

Hypothesis 5: Green Supplier development has a positive relationship with sustainability of the cocoa SC

Communication
Communication can be described as sharing of information, where a partner is given the opportunity to have access to the information of the other partner in the relationship (Attaran & Ph, 2007; Economics, Kim, & Chai, 2017) and this improves the buyer-supplier relationship. Likewise, Information sharing helps in building a solid buyer-supplier relationship and also helpful in sustaining the supply chain (Khan, Hussain, & Ajmal, 2017; Rao & Holt, 2005). It has been generally agreed that information sharing between participants increases commitment and trust (Anderson & Weitz, 1992; Hafiez et al., 2019). Moreover, when there is improvement in communication between parties in relationship, it directly leads to increase satisfaction (Meng & Berger, 2019; Mohr, Fisher, & Nevin, 1996) and sustainability of their operations. Hence the next hypothesis.

Hypothesis 6: communication has a positive relationship with sustainability of the cocoa SC

Conclusion
Even though studies into supply chain sustainability is on the increase (Pagell and Shevchenko, 2014; Seuring and Muller, 2008) much attention is focused on the manufacturing sector (Govindan et al., 2013; Mariadoss et al., 2016) however, very little work can be found in cocoa where studies have not been in the perspective of GBSR. However, supply chain sustainability in cocoa is seen as a huge problem (Gateau-Rey et al., 2018; Laven, 2010), and the irony of it is that, about 40 to 50 million of people in the world depends on cocoa for their livelihood (Lalwani, S.K.; Nunes, B.; Chicksand, D.; Booijawah, 2018). This study will attempt to discuss some of the factors in green buyer and supplier relationships that can lead to supply chain sustainability in the cocoa industry in Ghana. This study uniquely attempts to combine factors from both agriculture and manufacturing to study the unique nature of the cocoa industry supply chain sustainability as a new contribution to knowledge. According to (Rota, Pugliese, Hashem, & Zanasi, 2018), green relationship or collaboration between supply chain players is a driver of effective sustainability management.

Anchoring the findings of Rota et al., Kumar and Rahman (2015) confirmed that, the buyer and supplier relationship plays a key role in enhancing sustainability of the supply chain, because the sustainability of a product is affected by the sustainability performance of partners in the supply chain (Kudla & Klaas-wissing, 2012), thus for cocoa bean production to be sustainable and improved, the cocoa supply chain must be sustainable. However, Sustainability has a lot of challenges but this limitation can be corrected and resolved when the buyer and supplier share their capabilities and work in close relationship (Ronchi, Brun, Golini, & Fan, 2010). More so since the supplier is the true representative of sustainability in the supply chain (Jobbour et al., 2014; World Cocoa Foundation, 2015) Hence this study can most certainly say that, green buyer and supplier relationship will be vital in developing sustainable supply chain in Ghana’s cocoa industry.

References


