Understanding the role of Tier-I suppliers in enabling sustainable practices across multi-tier supply chains

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Abstract

This study aims to identify the conditions in which Tier-I suppliers will implement lead firms' sustainability requirements across multi-tier supply chains. It aims to build on existing literature by examining the role of Tier-I supplier from agency and institutional theory perspectives. In addition, it also identifies whether selective disclosure can exist when Tier-I suppliers couple with their double agency role. Taking a case study approach, we focus on agri-food commodities such as soybeans, palm oil and cocoa which have strong sustainability implications. Data were collected from several sources and case analyses were conducted. Results are encouraging for managers and policymakers.

Keywords: Sustainability, Supply Chain, Agency Theory, Institutional Theory

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1. **Introduction**

External stakeholders are often unable to differentiate between buying firms and their suppliers' behaviours. They tend to hold buying firms responsible for all the production and manufacturing activities in their supply chain, creating a chain liability effect (Rao, 2002; Choi & Linton, 2011; Hartmann & Moeller, 2014)). When companies fail to monitor their supply chain, they may face reputational damages, financial penalties and consumer boycotts. Lead firms that seek to address and mitigate against this chain liability effect need to create a transparent supply chain. The ideal solution is for lead firms to monitor all their suppliers. However, this can be challenging due to location, lack of collaborative technologies, or the sheer number of suppliers. When buying firms' supply chains are spread across the globe, it becomes challenging to implement sustainability policies across different cultures and local practices. Further, lead firms' lack of knowledge about their sub-suppliers is also another challenge relating to supplier management (Choi & Hong, 2002; Choi & Linton, 2011). As buying firms have limited control over sub-suppliers in a multi-tier supply chain, the responsibilities of managing sub-suppliers can fall on Tier-I suppliers. This is known as an 'indirect' approach to managing sub-suppliers (Tachizawa & Wong, 2014).

In a multi-tier supply chain, Tier-I suppliers may have to take on the responsibility of implementing lead firms' sustainability requirements in their own operations and disseminate lead firms' sustainability standards to their suppliers. This is known as the *double agency* theory (Wilhelm et al., 2016). As Tier-I suppliers may operate in different environments from the lead firm, they may face different trade-offs when it comes to implementing sustainability standards on behalf of buying firms. This leads to different outcomes such as Tier-I suppliers engaging in symbolic compliance with the lead firm's requirements, or fully complying with their sustainability requirements.

There are two forms of symbolic compliance strategies, *decoupling* and *attention deflection* (Marquis & Toffel, 2012). Decoupling involves suppliers creating an image which makes it seem like they are complying with the lead firm's requirements without actively doing so (Marquis & Toffel, 2012). Attention deflection, in particular, *selective disclosure,* refers to companies that disclose positive information about their compliance with external demands but choose to hide negative information that may harm their business (Egels-Zanden, et al., 2015; Marquis et al., 2016). If Tier-I suppliers choose to engage in symbolic compliance and are exposed by stakeholders, this can have a negative impact on the lead firm due to the chain liability effect.

This study builds on existing literature (Wilhelm et al., 2016) to identify the conditions in which Tier-I suppliers will implement lead firms' sustainability standards in their operations and those of their suppliers. We will examine this from agency and institutional theory perspectives to understand the conditions in which Tier-I suppliers will couple with the double-agency role in the agri-food industry. We also incorporate selective disclosure, as firms may conceal negative information about their sustainable practices despite coupling with their double agency role. The paper assumes a multi-tier supply chain as three tiers rather than networks and linkages with different actors (Wilhelm, et al., 2016). This allows us to gain a deeper understanding of the double agency role within different institutional contexts. Taking a multi-case study approach, we collected data and conducted within- and between-case analyses.

We first review relevant literature and set out our theoretical framework, before outlining our methodology in section 3. Section 4 presents the results of our case study analyses, and section 5 presents a discussion and implications of our findings. The paper is concluded in section 6.

2. Literature Review

With increasing pressure on buying firms to implement sustainability at lower levels, Tier-I suppliers act as important agents in disseminating sustainability standards to lower tier suppliers (Andersen & Skjoett-Larsen, 2009; Beske et al., 2008). As Tier-I suppliers may make buying or manufacturing decisions on behalf of the lead firm, they can influence the entire supply chain's sustainability. Their position can be described as a double agency role (Wilhelm, et al., 2016). The primary agency role refers to Tier-I suppliers fulfilling lead firms' sustainability requirements, while the secondary agency role reflects Tier-I suppliers implementing lead firms' requirements in Tier-II suppliers' operations (Wilhelm, et al., 2016).

Within a multi-tier supply chain there are multiple stakeholders, which raises the importance of agency theory. This theory refers the problems that occur when the principal delegates work to the agent. Agents are driven by self-interest and may engage in opportunistic behaviours and create high risks for principles when there is high information asymmetry and conflicting goals between the two parties (Eisenhardt, 1988; Zsidisin & Ellram, 2003). When there is goal conflict and information asymmetry between the lead firm and Tier-I suppliers, this can lead to the suppliers engaging in opportunistic behaviours.

Agency theory is widely used in supply chain management, as shown in a comprehensive literature review by Fayezi et al. (2012). One study suggests using direct suppliers in managing sub-suppliers. However, this study did not elaborate on the conditions that direct suppliers will take on the role of implementing sustainability in their suppliers' operations (Wiese & Toporowski, 2013). Tachizawa and Wong (2014) identified several contingencies and how those contingencies can affect firms' approaches to managing sustainability within multi-tier supply chains. They briefly mentioned the possibility of delegating the responsibilities of managing sub-suppliers to Tier-I suppliers. They also highlighted the role of agency factors, but the study is conducted from a lead firm's perspective. In addition, it does not delve into the conditions that affect Tier-I suppliers in implementing sustainability in their own operations and in their suppliers' operations. We focus on information asymmetry and incentives as multi-tier supply chains tend to have several agents with different incentives.

Institutional Factors

In a multi-tier supply chain, Tier-I suppliers experience pressure from regulations, lead firm (Tachizawa & Wong, 2014) and industry pressures (Simpson, et al., 2012). These factors can affect how Tier-I suppliers convey sustainability upstream in their supply chain. Although organisations seek to satisfy institutional stakeholders' demand and gain legitimacy, they are confined by local circumstances and access to resources to implement sustainability (Bhakoo & Choi, 2013). When they implement policies or procedures to gain legitimacy, this can make them less efficient and reduce their competitiveness. Due to this, they may engage in symbolic compliance to meet institutional demand.

Wilhelm et al. (2016) concluded that agency and institutional theories are important in the multi-tier supply chain for multinational companies. They explored the conditions in which Tier-I suppliers are willing to take on the double agency role in multi-tier supply chains from agency and institutional perspectives. This study explores the effect of incentives and information transparency on Tier I suppliers' willingness to comply or refuse to implement sustainability standards in both their own operations and those of their suppliers. Their study found that both factors have a positive effect on coupling with double agency role. However, this study can further be improved by applying agency and institutional factors to agriculture commodities with high sustainability issues like palm oil and cocoa (Newton et al., 2013). In addition, the application of selective disclosure can also improve the study due to the existence of the chain liability effect. Selective disclosure is a type of symbolic compliance, which refers to the action of promoting positive information and hiding negative information (Marquis & Toffel, 2012). Although the Tier-I suppliers might seem to comply with the lead firms' sustainability requirements by promoting their sustainability standards, they might intentionally conceal negative information to appear compliant with stakeholder pressure and create a positive image. However, if external stakeholders expose the negative information, this can lead to significant damage to a firm's reputation (Lyon & Maxwell, 2011). In addition, this reputational damage can also affect lead firms, even if they are not directly involved in the concealment of their suppliers' negative information.

This discussion raises two questions:

- Firstly, what conditions affect Tier-I agri-food suppliers to couple or decouple with their double agency role relating to sustainability?
- Secondly, can selective disclosure still exist when Tier-I suppliers display signs of coupling with their double agency role?

3. Research Methodology

We adopted a case study methodology and followed the steps proposed by Eisenhardt (1989). For case selection, we selected food companies that have high visibility (Castka & Balzarova, 2008; Wu & Pagell, 2011; Simpson et al. 2012; Wilhelm et al., 2016). We selected soy, cocoa and palm oil, which are agri-food commodities that have high sustainability impacts (Newton et al., 2013). Suitable firms were selected by referring to sustainability indexes and NGO websites. This allowed us to identify firms that use those specific commodities in their supply chains and are active in promoting sustainability in their respective supply chains due to chain liability effects. We focused on firms with an annual turnover of over 5 billion euros. They are based in Europe or North America. We shortlisted 12 companies from which we selected five for case analysis based on the information they supplied about their sustainability efforts in the supply chain.

3.1. Data Collection

We examined buying firms' reports and websites to select appropriate Tier-I suppliers. For each supply chain, we identified one main supplier either based on the lead firm's spend or its acknowledgement of the supplier being critical to the company's operations. We primarily collected data from three sources. First, we analysed lead firm and suppliers' corporate materials, websites and existing case studies, and consulted data sources from external sources, to aid with triangulation purposes (Jick, 1979). Second, we reviewed publications of external stakeholders such as NGO online materials or documents. As Tier-I suppliers are less likely to reveal negative information on their websites and publications, this helped us to identify if Tier-I suppliers were engaging in selective disclosure. Finally, we used public data such as public or industry reports to understand the institutional context of Tier-I suppliers.

3.2. Data Analysis

Based on NGO and industry materials, we created detailed descriptions of the institutional setting for the five different cases. As the first-tier suppliers operate in several different countries, we focused on the locations in which they source and process their products. We conducted open coding (Strauss & Corbin, 1990) for the secondary information by grouping words, sentences and paragraphs into codes to aid with further analysis. Axial coding was then undertaken to eliminate and merge codes based on common themes. We proceeded by linking the codes to the theoretical constructs such as information asymmetry, information transparency and institutional decoupling. Details of the coding (developed based on Wilhelm et al., 2016) is presented in Table 1.

<<Include Table 1 about here>>

This data analysis process allowed us to identify the conditions that affect direct suppliers in coupling or decoupling in their double agency role. After initial analysis for each case, we conducted cross case analysis to identify any similarities and differences in the central constructs (Eisenhardt & Graebner, 2007; Wilhelm, et al. 2016). For selective disclosure, we compared the institutional context, corporate materials and NGO documents to identify if selective disclosure exists in the supply chains. Details of each institutional context is presented in Table 2.

<<Include Table 2 about here>>

4. Case Analysis

This section presents the analysis of the individual cases and cross-case analysis to gain insights of the sustainable practices across the agri-food supply chains.

4.1. Within case analysis

4.1.1. McDonald's

McDonald's is a multinational food company that has thousands of Tier-I and Tier-II suppliers. For the purpose of this research, we consider issues around sustainable soy. McDonald’s was targeted by Greenpeace for sourcing chicken from Cargill, with the NGO accusing McDonald’s of promoting deforestation of the Amazon rainforest to grow soy used as poultry feed (Greenpeace, 2006). McDonald’s agreed to Greenpeace’s demand and set a target to procure fully sustainable certified soy by 2020 (Greenpeace, 2006). The fast food retailer also supported the ‘indefinite extension of the Brazilian Soy Moratorium’, along with Cargill and major soy traders where they agree not to purchase soy from Amazon forests deforested after 2006 (McDonald's, 2017a).

Cargill is McDonald’s biggest supplier of poultry products in the UK and Europe (Cargill, n.d.). McDonald’s conducts supplier audits but mainly focuses on product quality (McDonald’s, 2017b) rather than environmental or social sustainability. Thus, there is little information about the Tier-I supplier’s sustainability, which shows information asymmetry between the buying firm and Tier-I supplier is high.

McDonald’s had honoured Cargill with seven “Best of Sustainable Supply” awards (Cargill, 2014). This indicates that lead firm pressure is low, as McDonald's views Cargill as having good environmental practices and recognises it as an important supplier. The regulatory pressure is also quite low since there is lack of monitoring and weak enforcement from the Brazilian government as seen from the Brazilian Forest Code and CAR (i.e. Soares-Filho et al., 2014). However, industry pressure for sustainability is quite high as seen by the establishment of the Soy Moratorium agreement, and Cargill’s support of the Moratorium (Cargill, 2015).

There are strong incentives for Cargill to comply with the primary agency role because it is rewarded with continued and increased business through its sustainability efforts. This is demonstrated when McDonald’s France signed a new three-year agreement with Cargill in 2016 to source additional poultry products (Cargill, 2016). Cargill shows evidence of coupling with its primary agency role in its collaboration with NGOs and industry initiatives.

Cargill sources from more than 15,000 soy farmers, a mixture of small and large farmers (Cargill, 2017b). McDonald's relies heavily on certifications to monitor Tier-II suppliers. This means that information transparency between McDonald's and Tier-II suppliers is low because they do not interact with each other. Cargill has little incentive to implement sustainability in Tier-II suppliers' operations as the price of certified sustainable soy does not guarantee a premium for the company. Despite that, Cargill shows evidence of coupling with its secondary agency role in training 300 employees to monitor the Forest Code implementation and encourage farmers to register with CAR. It created a 'Geographical Information System (GIS)' team to monitor suppliers' compliance with regulations and monitor their supply chains. Cargill requests farmers to provide evidence of their registration with CAR, and those who failed to do so were required to sign an agreement stating they will adhere to CAR deadlines (Cargill, 2017a). To date, Cargill assessed more than 12,000 suppliers to track progress towards CAR status and Brazil Forest Code implementation. In summary, high industry pressure seems to be the main driver for Cargill's coupling with its double agency role, but incentives increase the possibility of coupling with the primary agency role.

Although deforestation due to soybean cultivation in the Amazon decreased due to the Soy Moratorium, the deforestation in Cerrado, Brazil, increased (Gibbs et al., 2015). According to a recent report, Cargill is one of the firms most closely linked to deforestation activity in the area (The Mighty Earth, 2017). Cargill's website did not specify that the company sources from Cerrado. However, it took a reactive approach and refused to support the extension of Soy Moratorium from Amazon forests to Cerrado (The Mighty Earth, 2017). This indicates that Cargill seems to promote its positive efforts in Amazon forests but does not disclose information regarding any involvement in deforestation of lands in Cerrado, suggesting selective disclosure.

4.1.2. Hershey

Hershey is a major North America chocolate company that sources a large amount of cocoa. In 2012, it committed to purchasing 100% certified and sustainable cocoa by the year 2020. Although Hershey is yet to fully meet its sustainability targets, it is currently sourcing 60% certified sustainable cocoa, showing that it is in line for its 2020 target (The Hershey Company, 2017). Hershey implemented sustainability standards by using certifications and working with Tier-I suppliers, however the company has demonstrated a desire to move beyond relying solely on third-party certification and actively engaging with smallholders. This led to the creation of programs and partnerships with the aim of improving agriculture practices, investment in education and community infrastructure. Ultimately, Hershey hopes to improve smallholder cocoa farmers' standards of living (The Hershey Company, 2017).

Hershey uses a mixture of third-party certifications and sustainability audits to verify Tier-I suppliers' compliance. In 2013, it used external auditors to monitor and verify 25% of suppliers. This number increased to 50 percent by 2014. The buyer chose suppliers for audits based on its supplier spend (The Hershey Company, 2014). Hershey worked with 'Source Trust' to interact with Tier-II suppliers (The Hershey Company, 2017). These certifications benefit Hershey because they provide a minimum sustainability standard for its suppliers and traceability in the supply chain. Meanwhile, the certifications can also benefit farmers in terms of higher income, access to new markets and improvements to their local community.

Barry Callebaut is one of Hershey's primary suppliers of cocoa (Barry Callebaut, 2007). Barry Callebaut views sustainability as a core strategy for growth and invests in schemes that improve social and environmental sustainability. Approximately 72% of Barry Callebaut's sales revenue comes from Europe and North America (Barry Callebaut, 2015). With growing awareness and demand for sustainable chocolates in these two regions (Food and Agriculture Organization of the United Nations, 2009), adopting sustainable practices for its cocoa supply chain allows the supplier to establish an order-winning criterion in the industry. Barry Callebaut operates in a low regulatory environment as most of the cocoa production and processing is based in West Africa, where there have traditionally been low regulatory labour and environmental pressures (Sackett, 2008). However, there are strong pressures in the cocoa industry due to low yields caused by extensive cultivation practices, an aging workforce, and the impact of pests and disease on crops (Wessell & Quist-Wessell, 2015).

Hershey views Barry Callebaut as a strategic partner as demonstrated when it signed a contract to source additional cocoa from the company in 2011 (Barry Callebaut, 2011). In addition, the Tier-I supplier developed its own sustainability scheme before its partnership with Hershey. This indicates that lead firm pressure is low since Barry Callebaut has their own sustainability programme, which Hershey chose to join after they became partners in the supply chain. Both firms agreed to work together on research & development, and to create a sustainable cocoa supply chain (Barry Callebaut, 2011). This indicates that that information transparency is high as they have frequent sustainability interactions beyond audits.

Barry Callebaut has a strong incentive to comply with its primary agency role because it views sustainability as a growth strategy. The Tier-I supplier seems to go beyond Hershey's sustainability standards and couples with its primary agency role. It invested in a wide range of sustainability activities and partnership with NGOs to promote sustainability across the cocoa industry. For instance, it established the 'Forever Chocolate' strategy with the aim of improving social and environmental issues (Barry Callebaut, 2016b). The company also collaborated with SAP to create a "cloud-based solution" to improve traceability and sustainability data management (Barry Callebaut, 2016a).

The information transparency between Hershey and its Tier-II suppliers is high because it works with Tier-I suppliers and NGOs to interact with farmers through the "Learn to Grow" programme. Through this initiative, Hershey provides training to help farmers obtain UTZ certifications and distributes higher quality cocoa trees to certified farmers (The Hershey Company, 2017). As an incentive, farmers that achieve certification standards receive premium payments for their cocoa beans. Barry Callebaut's incentives for complying with its secondary agency role is high because sustainable chocolates provide it with new market opportunities in the future and establish an order-winning criterion. Barry Callebaut seems to engage substantively in its secondary agency role. It works with International Cocoa Initiative to pilot a system to track and tackle child labour in its supply chain (Barry Callebaut, 2017a). It also invests in female empowerment initiatives to help women improve their business skills and earn a living (Barry Callebaut, 2017b). Lastly, it works with the International Finance Corporation and The Sustainable Trade Initiative to provide finance to more than 100,000 smallholders with the aim of expanding their production and income (International Finance Corporation, 2016). To summarise, high industry pressure and high incentives from new market opportunities lead to the Tier-I supplier coupling with its double agency role in social sustainability. This is further enhanced by high levels of information transparency in the multi-tier supply chain. The analysis of NGO reports and articles show no signs of selective disclosure by Barry Callebaut.

4.1.3. Nestlé

Nestlé is a multinational food company with more than 10,000 Tier-I suppliers. It trained 300,000 of its farmers in 2014 (Chartered Institute of Procurement & Supply, 2014), and established a set of 'Responsible Sourcing Guidelines' to increase transparency and traceability in its key raw ingredients' supply chains. In 2010, Nestlé introduced sustainability targets into its business with the aim of removing deforestation in its supply chain (Nestlé, 2011). Nestlé aims to source 80% of the key ingredients from audited and compliant Tier-I suppliers by 2020 (Nestlé, n.d.). At the same time, it aims to implement traceability to 80% of its key ingredients and ensure that 70% of them are sustainably sourced (Nestlé, n.d.).

To meet its palm oil target, Nestlé works with Wilmar International, a major agribusiness group, who supplies most of its palm oil. Wilmar International is currently operating in South East Asia, where there is weak enforcement of social and environmental regulations with regards to palm oil (Ivancic & Koh, 2016). However, there is high industry pressure to implement sustainability in palm oil from NGOs and consumers (Greenpeace, 2008; Amnesty International, 2016). The level of information transparency between the buying firm and Tier-I supplier is very high. Nestlé conducts audits on Wilmar's supply chain and engaged with the supplier extensively in the aftermath of an Amnesty International (2016) report into labour abuses in Wilmar's downstream supply chain (Nestlé, n.d.). Lead firm pressure for sustainability is strong, evidenced by Nestlé terminating Wilmar's contract from 2010-2012 because the supplier failed to comply with Nestlé's sustainability standards (Amnesty International, 2016). The incentive for Wilmar to comply with a primary agency role is strong because complying with the lead firm's sustainability requirements allows it to remain as one of Nestlé's main palm oil suppliers. To comply with institutional pressure for sustainability, Wilmar set up a transparency dashboard to track its progress for sustainability (The Forest Trust, 2015). Within the dashboard, Wilmar has a grievance procedure where it reports on allegations from NGOs or consumers. In addition, it developed a 'No Deforestation, No Peat, No Exploitation Policy' to address environmental and social problems (Wilmar, 2013). Wilmar's palm oil sustainability policies seem to reflect Nestlé's responsible sourcing policy, as both companies' policies go beyond RSPO standards to protect peatlands and high-carbon forests.

Information transparency between the lead firm and Tier-II suppliers is high, as Nestlé works with 'The Forest Trust' to interact with farmers and provide them with support for social and environmental problems (Nestlé, n.d.). The incentive for Wilmar to comply with its secondary agency role is also strong, which is also driven by being able to maintain its supplier status.

As a result, high agency factors lead to coupling with the secondary agency role. Wilmar partner with Wild Asia, GeoTraceability and the Sustainable Trade Initiative to develop 'a traceability system for smallholders' so that mills can track their smallholder supply base.

With the aim of encouraging farmers to participate in the programme, Wilmar included ‘GeoTraceability’s Digital Agronomist’ into the system which allows farmers to benefit from tailored agronomist advice for their fields, which is further supported by training and leads to RSPO certifications (Wilmar, 2016a). Ultimately, smallholders can benefit from improved productivity and profitability in their supply chain. In April 2017, Wilmar announced that it would collaborate with Verité on a 12-month project to address social issues in its own and its sub-suppliers’ operations. For environmental sustainability issues, Wilmar aims to improve transparency by supporting the implementation of ‘Starling’, a tool developed by TFT, Airbus Defence and Spare and SarVision’ into its supply chain. Starling can help monitor the palm oil supplier’s ‘No deforestation’ policies by verifying their sustainability claims (Wilmar, 2016b). In summary, high incentives, high industry pressure, and high lead firm pressure leads to Wilmar coupling in a double agency role for both social and environmental sustainability. This is further enhanced by high information transparency between lead firm, Tier-I, and Tier-II suppliers. All these factors compensate for the lack of formal regulatory pressure on Wilmar’s business. Analysis into NGO reports show no signs of selective disclosure. Although there were allegations that the company had engaged in deforestation and instances of child labour were found on some of its plantations (Amnesty International, 2016), the company disclosed these problems on its website and outlined the actions it had taken to address them (Wilmar International, 2017). Wilmar did not attempt to hide negative information from stakeholders.

4.2. Cross Case Analysis

This section presents a cross-case analysis of the three cases discussed in the previous section to explore trends between cases pertaining to factors that influence Tier-I suppliers’ decisions to couple or decouple with a double agency role This study also explores the possibility of selective deflection existing even when suppliers choose to couple with their double agency role. The case analysis is summarised in Table 3 (table structure adopted from Wilhelm et al., 2016).

<<Include Table 3 about here>>

4.2.1. Primary Agency Role

All cases demonstrate coupling with their primary agency role. High incentives, high industry pressure and low regulatory pressure seem to be present in all of the cases. The soy case shows that coupling can exist despite low regulatory pressure and low information transparency if there are high incentives and high industry pressure. This indicates that lead firms can incentivize Tier-I suppliers to comply with a primary agency role in the absence of regulatory pressure and information transparency. The cocoa case shows high transparency, high incentives, high industry pressure but low lead firm pressure and low regulatory pressure. Incentives seem to be a major driver for coupling of primary agency role, as Barry Callebaut views it as their growth strategy. This indicates that pressure from the lead firm might not be such a strong factor since industry pressure and high incentives can lead to coupling for primary agency role despite low pressure from the lead firm and low regulatory pressure. However, palm oil Tier-I suppliers experience high pressure from industry, high lead firm power, high incentives for implementing sustainability and high information transparency. This shows that the lead firm can use pressure as an incentive for Tier-I suppliers to couple in a primary agency role to protect its status as the lead firm's supplier. High information transparency also leads to coupling for the primary agency role.

4.2.2. Secondary Agency Role

Although all cases show evidence of coupling in a secondary agency role, those with high information transparency at the secondary agency level, such as cocoa and palm oil, show that the Tier-I suppliers have more engagement with their double agency role where they invest in schemes that benefit the farming practices and standard of living in the communities in which they operate. Meanwhile, lack of transparency for soybeans at the secondary agency level shows low levels of coupling. Cargill only focuses on monitoring and ensuring farmers comply with government sustainability regulations without providing direct benefits to the farmers.

4.2.3. Selective Disclosure

There was evidence of selective disclosure in only one case. In the soy case, Cargill promoted sustainability in Amazon forests but made no commitment to addressing soy sustainability in other parts of Brazil. However, in the cocoa and palm oil cases, there was no evidence of selective disclosure. We provide possible reasoning for this in the following section.

5. Discussion and Implications

This study indicates that agency factors such as information transparency and incentives have a positive effect on Tier-I suppliers coupling in their double agency role. Incentives are effective in both agency roles, while the importance of information transparency between the lead firm and Tier-II supplier increases appears to increase Tier-I suppliers' engagement in a secondary agency role. This is understandable, as high information asymmetry can lead to suppliers' opportunism, leading to the chain liability effect. On the other hand, when information asymmetry in the supply chain is low, lead firms are 'closer' to both their Tier-I and Tier-II suppliers. As such, there may be a greater expectation on Tier-I firms to engage in a secondary agency role, and more support and incentive provided by the lead firm to encourage them to do so. These results mirror those found by Wilhelm et al. (2016).

Institutional factors, especially industry pressure, were found to have a positive effect on the double agency role for Tier-I suppliers. In all cases, it led to coupling with a double agency role. Further analysis of the soybean case shows coupling in the secondary agency role occurred only with high industry pressure, despite other factors remaining low. These findings suggest that industry pressure has a strong influence in affecting Tier-I suppliers in undertaking the double agency role. This supports findings of previous studies in which companies improved their sustainability standards due to industry pressures (Zadek, 2004; Terry, 1983). However, the soybean case also indicates that industry pressure alone may be insufficient as it may lead to selective disclosure. While industry pressure was high, lead firm pressure and information transparency were low. Under these conditions, selective disclosure occurred. Institutional pressure in isolation may increase the possibility of selective disclosure because Tier-I supplier want to portray an image that they are complying with institutional stakeholders' demands without necessarily feeling pressure from the lead firm to make any substantive amendments to their practices. Moreover, in line with our reasoning in the previous paragraph, if information transparency is low, lead firms may not know what Tier-I and Tier-II suppliers are doing. As such, Tier-I suppliers may believe they can 'get away' with engaging in selective disclosure. In the other two cases, either lead firm pressure (in the palm oil case) or information transparency (in the palm oil and cocoa cases) were high, and selective disclosure did not occur. In the palm oil case, Nestlé representatives visited its Tier-I supplier relating to its sustainability activities, and Tier-II suppliers to understand their living conditions. Such activities can reduce the possibility of selective disclosure as they make it difficult for Tier-I suppliers to conceal information about sustainability when the lead firm has a good understanding of the sustainable issues at the Tier-II level. This seems logical because Tier-I suppliers (agents) are more likely to engage in opportunistic behaviours when information asymmetry (Eisenhardt, 1988) exists in the supply chain. Moreover, incentives are also important factors in encouraging Tier-I suppliers to engage in a secondary agency role, as shown in the cocoa and palm oil cases. This supports the findings of Grimm and colleagues (2014), who demonstrated evidence of Tier-I suppliers coupling with a secondary agency role if they could benefit from doing so.

In line with prior research (Gold et al., 2013), this study shows that companies collaborating with NGOs to address issues in the supply chain can lead to higher information transparency and a higher possibility of Tier-I suppliers coupling with their secondary agency role. As companies may lack the resources or expertise in sustainability, NGOs can be a source of knowledge and provide them with guidance to improve sustainability. For example, Nestlé worked with TFT to gain visibility into its Tier-II suppliers' practices, assess their capability about sustainable issues and provide them with advice to improve their practices. Similarly, Hershey worked with 'Source Trust' to deliver their 'Learn to Grow' programme with the aim of gaining visibility into farmers' sustainable practices and help farmers improve their farming practices through training. Both cases show that collaborating with NGO leads to higher information transparency in sub-suppliers' sustainable practices, which can increase the chance of Tier-I suppliers coupling in their secondary agency role. Overall findings are presented in the framework displayed in Figure 1.

Our findings have several important implications for practitioners. Firstly, firms should invest in incentives to stimulate Tier-I suppliers. Appealing to their motivation such as rewarding them with additional business and paying a premium for sustainable products when they achieve specific sustainability targets. This also means that lead firms need to be able to work and interact with their Tier-I suppliers to gain visibility in their sustainability practices. In doing so, the lead firm will be able to measure and quantify direct suppliers' sustainability efforts and reward them accordingly. This can incentivise suppliers to engage in sustainability practices and keep suppliers tied to the lead firm.

Secondly, it is important for the lead firm to gain transparency into Tier-II suppliers' sustainability activities to understand sustainability issues and constraints faced by sub-suppliers. This can be done by investment in sustainability schemes and collaboration with NGOs. By improving transparency, this can reduce the likelihood of Tier-I suppliers decoupling with their secondary agency role by encouraging cross-tier collaboration.

Thirdly, it is important for lead firms to understand that selective disclosure can exist despite Tier-I suppliers coupling with their double agency role. Firms should try to improve visibility in the supply chain and understand sustainability issues at the Tier-II level and generate a deep understanding of sustainability issues within the specific industry. If the lead firm finds a discrepancy between expected and actual standards, it should communicate with Tier-I suppliers to find out if they are doing anything to address those discrepancies. However, this can be expensive and time-consuming as it requires a deep level of industry knowledge and insight into Tier-I suppliers' sustainability practices.

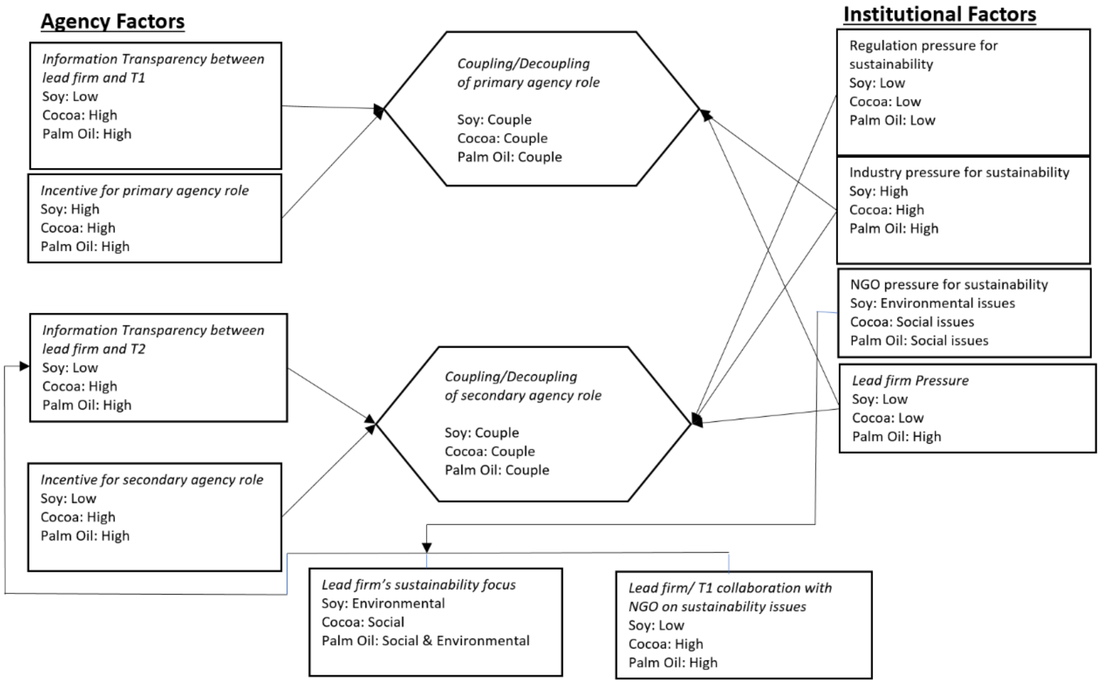

Figure 1 Framework

6. Conclusion and Scope for Future Research

As sustainability in multi-tier supply chain becomes more important, Tier-I suppliers' role in disseminating lead firms' sustainability standards increased in popularity. This study built on existing literature regarding the conditions that influence Tier-I suppliers to couple with their double agency role with the aim of creating a transparent food supply chain and protecting lead firms from chain liability effects. Although this study highlights the possible existence of selective disclosure, future research into this phenomenon from Tier-I suppliers' perspectives would be beneficial. Specifically, investigating why Tier-I suppliers engage in selective disclosure despite coupling in a double agency role would help protect against chain liability effects. Further, from an institutional perspective, in-depth analysis of how agri-food certification bodies such as the RSPO and UTZ operate with regards to influencing compliance to sustainability standards in the supply chain is important. As is the examination of how their operations could be improved.

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Table 1

Details of Coding Categories

Coding Category	**Description**
Regulatory pressures for sustainability	Examples when documents discuss external pressures arising from regulation.
Industry Pressure for sustainability	Instances when documents talk about industry pressure for sustainability from consumers and other stakeholders
T1 suppliers' incentives for implementing sustainability in primary and secondary role	Documents that discuss access to new opportunities, improved profitability, competitiveness, reputational image or any additional advantages that arise from the implementation of sustainability standards in T1/T2 operations
Collaboration with NGO	Instances when lead firm talk about their collaboration with NGOs
Lead firm pressure for sustainability	Instances when internal and external sources discuss lead firm purchasing powers, reliance on resources from suppliers and suppliers' reputation.
Information transparency buyer-T1 and Information transparency between buyer and T2	Instances when buyer discusses information transparency in T1/T2 suppliers' supply chains
Coupling of primary/secondary agency role	Examples when T1 makes actual changes to their sustainability practices, such as surpassing sustainability certification requirements or having dedicated roles to manage sustainability.
Decoupling of primary/secondary agency role	Instances when T1 only makes cosmetic changes in their sustainability management with the aim of passing audit before reverting to old practices after passing sustainability audits.
Evidence of selective disclosure.	Analysis of external stakeholders' material indicates that Tier-I suppliers have engaged in some form of greenwashing activity (i.e. committed to a sustainable initiative without following through).
No evidence of selective disclosure.	Analysis of external stakeholders' material shows no indication that Tier-I suppliers have engaged in greenwashing activity.

Table 2

Institutional Contexts

Case Studies	Characteristics of Institutional Context	Secondary Data
Soy (Brazil)	Brazil's forest code's purpose is to regulate land use and protect environmentally sensitive areas. They are seen as insufficient to protect forests from deforestation due to problems with monitoring, enforcement and state reluctant to prosecute due to corruption practices. Due to growing pressure from NGOs and consumers, two major soybean associations signed an agreement stating that their members would not purchase soybeans sourced from deforested Amazon farmlands after 24 June 2006. In addition, there are also pressures from the consumer countries such as IDH programmes partly funding by the Dutch, Swiss and Danish governments as well as private companies. They aim to help soy producers in major soy exporting countries to comply with RTRS. External stakeholders such as banks and NGOs also play an important role in implementing sustainability. Banks have the power to control lending to agriculture businesses and refusal to comply with environmental regulation can lead to problems with financing. Meanwhile, refusal to comply with sustainability standards can also lead to reputational damage.	Azevedo, et al., (2017); WWF (2014); KPMG International Cooperative (2013)
Palm oil (Indonesia)	Palm oil production mostly takes place in developing countries in South East Asia There is a lack of regulations which govern labour practices in these countries. Palm oil plantations are labour intensive, and most workers face a lack of job security. There is also evidence of child labour in the plantations as workers are pay is target-based, causing them to bring their children to work. As a result, children may drop out of school or skip class to help their parents in the plantation, which can lead to a poverty cycle. Regarding environmental conditions, palm oil contributes to rapid deforestation, reduction in biodiversity and more greenhouse gases. These issues led to the establishment of Roundtable on Sustainable Palm Oil (RSPO) and Indonesian Sustainable Palm Oil (ISPO) standards. Although ISPO is mandatory in Indonesia, their social and environmental standards are less strict compared to RSPO. However, there are criticisms that RSPO is not effective at addressing environmental issues and problems with the auditing process. Despite these factors, the industry pressure is quite strong because of pressure from consumers, NGOs and stakeholders.	Emily Fripp & Associates Ltd, 2017; Efeca, 2015; Amnesty International, 2016

Case Studies	Characteristics of Institutional Context	Secondary Data
Cocoa (West Africa)	The production and processing of cocoa mainly takes place in West Africa. The cocoa farmers are generally smallholders with limited power to influence lead firms. There is a lack of regulations regarding cocoa production and imports, this leads to problems with child labour and farmers being exploited by buyers. In addition, farmers receive low income and standards of livings. As a result, younger generations are more likely to choose an alternative career than become a cocoa farmer. Cocoa is generally certified by Rainforest Alliance, UTZ and fair trade. Fair trade focus on paying farmers with a fair price and premium for their products, while Rainforest Alliance focus on environmental issues with little premium and UTZ focus on both but with slightly less rigorous standards for both standards.	(Anti-Slavery International, 2004; Food & Agriculture Organization of the United Nations, 2009)

Table 3

Case Analysis

Commodity	Institutional Factors	Primary Agency Factors	T1 compliance with primary agency role	Secondary Agency Factors	T1 compliance with secondary agency role
Soybeans	Low regulative pressure due to weak enforcement High industry pressure as seen from the Brazilian Soy Moratorium Low pressure from lead firm, as McDonald's views Cargill as having good environmental practices and as an important supplier	Information Asymmetry from lead firm to T1 Interaction between lead firm and supplier focuses on quality audits Incentive for T1 for primary agency role Continued and improve business from lead firm	Couple Invest in GIS monitoring technology to monitor suppliers	Information Asymmetry from lead firm to T2 No Interaction with T2 suppliers Incentive for T1 for secondary agency role No guaranteed premium as price for sustainable soy fluctuates	Couple Trained 300 employees to monitor and encourage farmers to register with CAR Assessed more than 12,000 soy farmers for their compliance with CAR status and Brazil Forest Code

Cocoa	Low regulatory pressure since there are weak regulations on labour and environmental practices High industry pressure because future of the industry is threatened by future generations not wanting to be cocoa farmers Low pressure from lead firm since Barry Callebaut has their own sustainability programme	Information Asymmetry from lead firm to T1 Frequent interaction between lead firm and T1 Incentive for T1 for primary agency role View sustainability as a strategy to grow the organisation	Coupled Established 'Forever Chocolate' strategy with the aim to remove child labour, improving farmer's livelihood, protecting the environment and creating sustainable chocolates. Implement SAP to encourage sustainable cocoa farming	Information Asymmetry from lead firm to T2 Works with three established certification partners Interaction with T2 about sustainability issues and provide them with support to improve their standard of living Incentive for T1 for secondary agency role New market opportunities Order winning criteria	Coupled They work with International Cocoa Initiative to tackle child labour. Help woman improve their business skills and earn a living by working at farmers' organisations Collaborate with International Finance Corporation and The Sustainable Trade Initiative to provide finance to more than 100,000 smallholder farmers Work with Hershey on the "Learn to Grow"" programme to help improve farming practices and help farmers become UTZ certified

Palm Oil	Low regulatory pressure due to complicated and weak law enforcement High industry pressure from consumers and NGOs High pressure from lead firm as Nestlé is one of their main customers and they have the power to cancel the supplier contract	Information Asymmetry from lead firm to T1 Monthly meetings for social issues and audits Incentive for T1 for primary agency role Helps them retain their supplier status	Coupled Wilmar set up their own sustainable policy, which goes beyond RSPO requirements and cover some of lead firm's 'Sustainable Sourcing policy'. Set up transparency dashboard for sustainable practices	Information Asymmetry from lead firm to T2 High visibility into T2 they work with TFT to interact with T2 farmers Incentive for T1 for secondary agency role Helps them retain their supplier status	Coupled Project to implement visibility and increase transparency Collaborate with NGO to address social issues in their supply chain. Support the implementation of 'Starling' to help verify environmental sustainable progress