

Master's Thesis Internship – master Sustainable Business and Innovation

The perceptions of different customers towards collaborative partnerships and sustainability in the supply chain

A case study of Trouw Nutrition



Utrecht University



Romee Visch (4158792)
r.i.visch@students.uu.nl

University supervisor: Dr. Taneli Vaskelainen
Second reader: Dr. Karlijn van den Broek

Internship organisation: Trouw Nutrition
Organisation supervisor: Filippo Larceri, filippo.larceri@trouwnutrition.com

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Summary

Supply chain (SC) collaboration with the aim to innovate can play an important role in solving various sustainability issues in the agri-food sector. However, many companies fail to have successful collaboration because of misconceptions and differences in perceptions between the SC members involved. Little research is found combining the perceptions of current collaborative partnerships and how sustainability perception can affect these. Besides, to resolve the issue of misconceptions and failure of SC collaboration, including collaborative innovation, it is relevant to study the different perceptions of SC customers. Hence, this research is aimed to get a better understanding of what the perceptions of different customers in the agri-food SC are towards collaboration, including collaborative innovation, in the present partnership. Besides, by studying the perceptions towards sustainability a better understanding can be obtained on how sustainability affects the present partnership and how it can be promoted. For this qualitative research, 20 interviews were conducted with customers from four different customer groups of the animal nutrition company, Trouw Nutrition. The findings show that the perceptions of the different customer groups towards the present partnerships are based on three dimensions (intrinsic considerations, external drivers and partnership criteria), which consist of elements that are considered as important for collaboration and collaborative innovation. The findings indicate that on an abstract level the different customers find similar elements important to the present partnership. However, more specifically for collaborative innovation, differences occur in which elements are important amongst the customer groups. Besides, it is observed that the customer groups differ in their opinion on the importance of collaborative innovation. Furthermore, findings show that the different customer groups perceive sustainability in different ways. Based on the three dimensions identified in the present partnership, it is observed that sustainability perception can affect (negatively or positively) the feasibility of addressing sustainability in partnerships and it became clear that sustainability can be promoted in two ways. First sustainability can be promoted by anticipating on existing intrinsic considerations towards sustainability, and second by external drivers that are required to stimulate them towards sustainability. These findings contribute to gaining insight in what is found important for collaborative innovation, which can be used to create more effective partnerships. Also, useful insights are given in how sustainability can be promoted which is especially relevant for the agri-food sector as this sector is challenged in enabling to feed the future sustainably.

Executive Summary

There is growing public attention and consumer awareness towards agricultural products because of concerns regarding food availability, security, and safety. These pressures on the agri-food sector indicate the need for companies to anticipate and implement changes to be able to feed the future in a sustainable way. One way how companies can increase effectiveness and anticipate societal needs is by working together with other partners in the supply chain (SC). Especially, being able to generate innovations in collaboration is essential to respond to these market challenges. To address sustainability in the SC, collaborative innovation with customers is increasingly important for new product development and service opportunities. By including customers in collaboration, it is more likely that the innovation will be a success and reduces failure. Previous research highlighted the importance of supply chain collaboration and collaborative innovation for providing benefits to participating companies and identified elements enabling effective collaborations. However, it is observed that collaborations often fail due to miscommunication and misalignment between the partners. Difference in interest and understanding also hinder collaborative innovation.

A company that is concerned about feeding the future is Trouw Nutrition. Trouw Nutrition faces different customers with different interests, which makes it complicated for them to understand how to approach partnership and sustainability in the right way. Trouw Nutrition aims to improve their relationship with their customer and to create more effective collaboration to address sustainability issues based on the customer's needs. This study provided insight for TN in what their different customers (feed producers, integrators, farmers and dealers) think of collaborative innovation, how they perceive sustainability and how this can be best promoted in the current partnership.

The findings indicate that on an abstract level the different customers find similar elements important to the present partnership (e.g., ensuring business continuity, creating additional benefit, gaining a competitive advantage, complying to external demand). However, more specifically for collaborative innovation, differences of opinion in what elements are important and what it exactly entails occur between the customer groups. Besides, it is observed that the customer groups differ in their opinion on the importance of collaborative innovation. Based on these findings, it is recommended to carefully take the different perceptions and different interests of the specific customer into consideration for collaborative innovation. Especially regarding the feed producers and integrators, there is a lot of potential to work together on new innovative projects. The main focus can be on creating a competitive advantage through the development of unique solutions for the local markets and by means of certification, which enables parties to differentiate from competitors. The farmers show lower interest in collaborative innovation but are in favour of working together. In this, cost-efficient on-farm solutions are key. The dealers show no interest in collaborative innovation, thus it is advised to mainly focus on keeping a good relationship and provide products according to their needs.

More specifically for sustainability. It is observed that the different customer groups perceive sustainability in different ways, and this can (negatively) affect the feasibility of addressing sustainability in partnerships. Based on these findings it became clear what should be done to promote sustainability. This can be done in two ways, first by anticipating on existing intrinsic motivators towards sustainability, and second by external drivers that are required to stimulate them towards sustainability. The feed producers and the integrators show to some extent already intrinsic interest in sustainability and recognise the relevance to address sustainability in partnerships. For the feed producers, sustainability is mainly related to creating an additional benefit by providing cost-efficient

solutions to their customers and gaining a competitive advantage in which they seek to find new sustainable products together with their supplier. The integrators also show interest in addressing sustainability in partnerships when it can create a competitive advantage. In this, they aim to deliver an end product with some sort of label that shows the sustainability of their product to the customers. External drivers are also considered important for addressing sustainability in partnerships and can drive the initiation of new innovative projects. Hence, it is advised to initiate new projects that will address these opportunities. The farmers recognise the importance of sustainability but perceive it as something that needs to be addressed in the future. They find sustainability as part of collaborations only relevant when this will create an immediate additional benefit as they seek economic benefits. However, external demand is especially observed as a key driver to push the farmers to address sustainability as they respond directly to regulations or customers. In this, they highly value (and require) the support of their supplier. Hence, it is recommended to support the farmer as much as possible by providing them sustainable cost-efficient solutions and when needed, help them with dealing with external demand. This can for instance be done by predicting to some extent what future trends will come forward so the farmer can be best supported. Most dealers perceive sustainability not as something important and show little interest in addressing this in partnerships.

Overall when collaborating with customers, it is advised to identify and align the perceptions of the partners involved towards the topics addressed and based on these perceptions further specification is required on how to address the issue for effective collaboration. Especially when addressing sustainability, it is important to get alignment about the meaning and of the wording which is used by the customers and what specifically needs to be addressed. In this way, sustainability issues can be tackled in a more efficient way and taking a step in the right way to feed the future.

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1 Introduction

The world population is rapidly growing, which means more food and resources are needed (Tilman et al., 2011). However, currently already too much resources are taken up by humans than the planet can regenerate (Ehrlich & Holdren, 1971). Hence, to feed the growing population, resources need to be obtained and used more effectively and in a sustainable way. Corporate behaviour plays an important role in dealing with the challenge of feeding the future both in food production and resource usage (Hart, 1995). As a result, there is growing public attention and consumer awareness towards agricultural products, because of concerns regarding food availability, security, and safety (Handayati, Simatupang & Perdana, 2015). Besides concerns related to the availability of food, there is growing demand from consumers to get more insights on different aspects of the whole supply chain (SC), such as, production processes, transportation, and farming (Ahumada & Villalobos, 2009). These societal pressures on the agri-food sector indicate the need of organisations to anticipate and implement changes to fulfil these external demands regarding providing food in a sustainable way.

One way how organisations can increase effectiveness and anticipate societal needs is by looking further than their own boundaries and evaluate the utilisation of resources and capabilities of customers and suppliers in their SC for value creation (Soosay, Hyland & Ferrer, 2008). By involving other actors in the SC, better alignment can be created fulfilling external demand and thus, contributing in feeding the future in a sustainable way. To implement these SC evaluations, integration, and collaboration is required (Soosay, et al., 2008). More specifically, SC collaboration implies that two or more independent companies work together to plan and carry out SC operations to effectively meet customer's needs at lower costs (Simatupang & Sridharan, 2005). By collaboration in the SC, many issues can be solved, including more efficient use of resources. Additionally, the growing concern regarding sustainable food production requires even more the need from companies to work together to feed the future sustainably (Seuring, Sarkis & Müller, 2008). When addressing organisational sustainability challenges and implementing sustainability goals, closer collaborations between partners in the SC are especially important to meet financial and operational, environmental, and social performance criteria (Gold, Seuring & Beske, 2010).

Another way how organisations in the agri-food sector can deal with the need for change to be able to feed the future in a sustainable way is through innovation. More specifically, being able to generate innovations is essential to respond to these market challenges. Especially through collaboration with other partners in the SC, these innovations can be generated (Skippari, Laukkanen & Salo, 2017). To address sustainability in the SC, collaborative innovation with customers is increasingly important for new product development and service opportunities (Greer & Lei, 2011). By including customers in collaboration, it is more likely that the innovation will be a success and reduces failure.

Many scholars have researched SC collaboration and collaborative innovation in the last decades. Some directions studied are the benefits and opportunities for organisations resulting from collaborations (Cao & Zhang, 2011; Kalwani & Narayandas, 1995; Mentzer, Min & Zacharia, 2000), successful innovation through collaboration (Soosay et al., 2008; Swink 2006), features and elements enabling effective collaborations (Barratt, 2004; Simatupang & Sridharan, 2002, 2005). More specifically, addressing sustainability in collaborations is becoming an increasingly studied research field. Especially regarding the link between sustainability collaboration and performance of companies on economic, environmental and social dimensions in the SC (Azevedo et al., 2018; Chen et al., 2017; Chin, Tat & Sulaiman, 2015) and the benefits of collaboration for sustainable management of the SC

(Beske & Seuring, 2014; Blome, Paulray & Schuetz, 2014; Pakdeehocho & Sukhoto, 2018).

Despite all the advantages associated with supply chain collaboration (SCC) and identified elements enabling effective collaborations, many companies fail to have indeed successful collaborations (Cao & Zhang, 2011). A main reason for collaboration failures is miscommunication, which causes misunderstanding and conflicts between partners (Tuten & Urban, 2001). Also, few organisations experience the benefits of SCC because of differences in interests among SC members (Simatupang & Sridharan, 2002). Besides, according to collaborative innovation, Skippari et al. (2017) identified that different perceptions of managers about SC relationships is a crucial barrier and hinder collaborative innovation. To overcome these failures and to improve the effectiveness of SCC further research is needed. Research regarding obtaining a better understanding of the different perceptions towards those topics are particularly relevant. Especially when addressing sustainability through collaboration, the different perceptions of customers can be problematic and hinder innovation (Skippari et al., 2017). As described above, some researchers have studied the impact of certain elements on effective collaboration, including collaborative innovations. Other studies identified how certain elements can be enhanced through collaborations. Besides, according to sustainable SCC, researchers have studied how this can be done more effectively. However, little research is found combining the perceptions towards current collaborative partnerships with how sustainability perception can affect these, and thus can be promoted in the SC. Besides, to resolve the issue of misconceptions and failure of SCC, including collaborative innovation, it is relevant to study the different perceptions of SC customers. Hence, this study aimed to fill this gap by getting more insights in the perceptions of different customers in the SC and where potential differences lay. Therefore, the first research question is:

1. *What are the perceptions of different customers in the supply chain regarding collaborative innovation in the present partnership?*

Besides, different views on sustainability related to collaborations and innovation in the SC is important to uncover as sustainability issues are a growing concern and increasingly important to address. More specifically, by unravelling the perceptions towards sustainability and how this connects to present collaborative partnerships, a better understanding can be created about how to improve future collaborations and innovations. Therefore, the second research question is:

2. *How is sustainability perceived by different customers and how does this affect the present collaborative partnership in the supply chain?*

To answer these questions, a closer look was taken at a specific company in the agri-food sector and its SC, in this case Trouw Nutrition, a Nutreco company. Trouw Nutrition is a world leader in animal nutrition by providing feed specialties, premixes and nutritional services (Trouw Nutrition, 2019). They offer species-specific nutritional solutions through feed concepts, models and services. The aim of Trouw Nutrition is to address sustainability issues in the SC through collaboration and further improve customer focus and innovation by focusing on the needs of the customer. Hence, with a special focus on their customers, the different perceptions of Trouw Nutrition's customers are uncovered. Trouw Nutrition and its SC was an appropriate case to study this phenomenon as Trouw Nutrition shows grounded interests in innovation (and is well known for its R&D) and sustainability. Besides, the complexity of the SC with different partners made it able to uncover the perceptions of different

customers. This is accomplished by conducting personal interviews with the different customer groups of Trouw Nutrition.

The theoretical relevance of this study is providing empirical insights in this relatively little studied phenomenon. More specifically, by providing insights in the different perceptions of SC members a better understanding can be gained in how effective collaborations can be created. Especially, the insights regarding the different perceptions towards sustainability in partnerships can direct future scholars in studying effective sustainable SCC. The societal relevance is that this study will contribute to better understanding of what drives SCC with respect to the different perceptions of partners. This is especially relevant for sustainability issues as this is an increasing problem for society. With the insights of this study, potential collaborations in SCs in the agri-food sector can be improved, which helps facing sustainability challenges. Especially for organisations involved in collaborations, these insights can help accelerate sustainability practices in the SC in a more effective way. Furthermore, this research will contribute to the interorganisational relationships literature, more specifically, the SCC and collaborative innovation literature.

The structure of this thesis is as follows. In the second chapter, the theoretical framework is elaborated on. The third chapter explains the methodology used. In chapter four, the findings of this study are described. Chapters five and six addresses the discussion and conclusion of this study, including limitations and suggestions for further research.

2 Theoretical framework

In this chapter, the theoretical framework of this study is elaborated on. To answer the research questions, literature on interorganisational relationships, and more specifically, literature on SCC, collaborative innovation, and sustainability as part of collaboration was used.

2.1 Supply chain collaboration

When focusing on interorganisational relationships, effective partnering with others is important (Parmigiani & Rivera-Santos, 2011). Partnerships facilitate to improve legitimacy and reputation, obtain powerful allies, gain access to more and greater sources of social capital, and get connected with other distant organisations (Parmigiani & Rivera-Santos, 2011). To create meaningful long-term partnerships, these need to be negotiated with the SC. For effectively combining demand and supply, collaboration is needed in the SC with the different partners (Simatupang & Sridharan, 2005). By collaborating in the SC, this can bring advantages and benefits to the partners over time, including productivity enhancement, cost reduction, and competitive advantage (Cao & Zhang, 2011). Besides, being it a way to increase benefits, collaboration is also an appropriate way to address certain challenges in the SC, such as food availability in the agri-food SC (Matopoulos et al., 2007) or sustainability issues (Gold et al., 2010). As it is observed that SCs are operating in more dynamic environments, integration and collaborative efforts are required (Soosay & Hyland, 2015). As a consequence, partners in the SC experience more pressures to address issues, and therefore partnering through collaboration in which they effectively combine and link operations could be essential (Soosay et al., 2008).

Research on collaborative SCs is extensive with different concepts offered. Collaborative SCs can be divided based on structure. In case of this study, the focus is on vertical collaboration, which is collaboration between two or more organisations that offer similar products/services to end consumers and therefore share responsibilities, resources, and performance information (Simatupang & Sridharan, 2002). Barratt (2004) identifies the major elements of SCC considering vertical collaboration, which include external collaboration with customers and suppliers, and internal collaboration within the organisation itself. Barratt (2004) emphasises that internal collaboration is perhaps the most important issue and needs to be strongly aligned with external collaboration in terms of developing closer relationships, integrating processes, and sharing information with suppliers and customers. Figure 1 shows the scope and opportunities of vertical collaboration both upstream (suppliers) and downstream (customers). The potential opportunities are upstream: production scheduling, supply planning and new product introduction, and downstream: demand replenishment, collaborative planning, and shared distribution (Barratt, 2004). Besides information exchange on an operational level, also exchange relationships are needed at tactical and strategic levels across the SC as these are required to be integrated as well to obtain performance benefits (Barratt, 2004).

The focus of this research is on customer interaction as it is identified that to address challenges in the SC, customer support, and alignment is essential (Skipworth et al., 2015). Especially when collaboration is focused around products and services, customers could have influence on the success or failure of the outcome (Ramanathan et al., 2018). Besides, effectiveness of collaborations can be increased by involving customers as it is observed that customer satisfaction has a greater effect than cost savings (Fawcett, Magnan & McCarter, 2008). Hence, this shows the importance of taking a closer look at SCC with the customer.

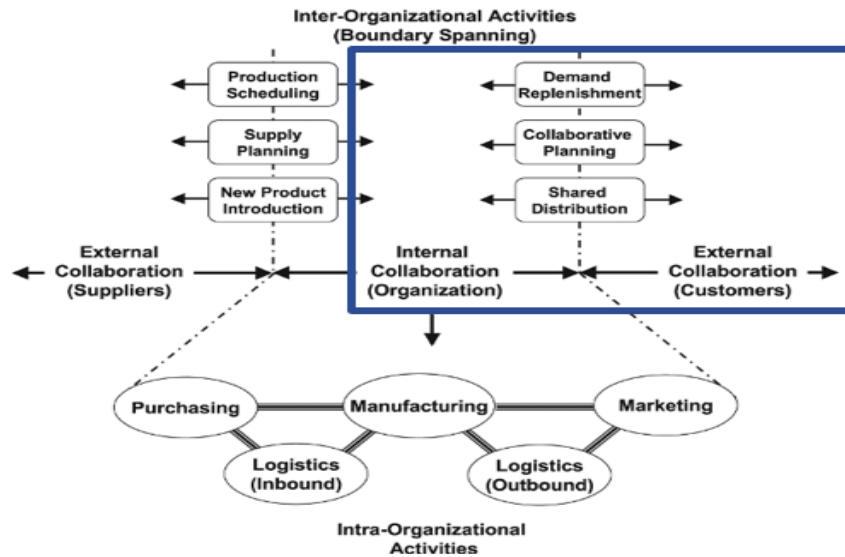


Figure 1. The scope and opportunities for vertical collaboration. Vertical collaboration consists of external collaboration, interaction with the suppliers and customers, and internal collaboration, the organisation itself (Barratt, 2004). The focus of this study is on downstream collaboration between the organisation and customers.

Furthermore, as highlighted above, collaborations can provide many benefits to the SC partners. However, to realise these benefits, the collaborations need to be successful. Barratt (2004) highlights that many elements of collaboration are identified in the literature regarding effective management of the SC. One element identified by the same author is collaborative culture and is one of the major supporting elements. Collaborative culture consists of several cultural elements, which are trust, mutuality, information exchange, and openness, and communication. The cultural aspects of collaborations are of great importance for effective partnerships, however, only a few studies focus on this (Kampstra, Ashayeri & Gattorna, 2006). Other scholars also identified similar elements that are important to establish and maintain relationships in collaborations, including, trust, capabilities of people and communication, knowledge capabilities, and mutual commitment (Fawcett et al., 2008; Fawcett, Jones & Fawcett, 2012; Fischer, 2013; Nyaga, Whipple & Lynch, 2011). Besides, other studies found elements, which can be enhanced or improved by SCC, such as gaining a competitive advantage (Chen & Paulray, 2004), ensuring market share and increasing sales (Lewis, 2002; McLaren, Head & Yuan, 2002).

Despite all the advantages associated with SCC and identified elements enabling effective collaborations, many companies fail to have indeed successful collaborations (Cao & Zhang, 2011). Also highlighted by Simatupang and Sridharan (2002), SCC can bring mutual benefits, however, these benefits are rarely realised because of differences in interests among SC members (Simatupang & Sridharan, 2002). They argue that a cause for this is managerial inertia of chain members. They identified sources for managerial inertia that prevent effective SCC, which are inappropriate measures of performance, outdated policies, asymmetric information, and incentive misalignment. When these issues are aligned across the SC members, benefits can be derived from effective collaborations. This highlights the importance of finding out the different interests of partners in the SC and where potential misalignment occurs. Especially considering increasing challenges in the SC that needs to be addressed, this could be of high relevance.

2.2 Collaborative innovation

When addressing certain challenges or issues in the SC and to cope with the need for change, organisations generate innovations, which can among other things, include new products, services, technologies or processes (Skippari et al., 2017). To get access, develop, and implement innovation, members in the SC engage in collaborative partnership (Roy & Sivakumar, 2010). The ability to work together with partners in the SC makes it possible to integrate and connect operations to increase effectiveness and to generate innovations (Soosay et al., 2008). Especially collaborative innovation as part of SCC has become essential to cope with SC challenges (Sha, Li & Shi, 2020). Collaborative innovation can be defined as following: “*Collaborative innovation involves contributors who share the work of generating a design and also reveal the outputs from their individual and collective design efforts to each other or agreed upon partners*” (Skippari et al., 2017, p. 108).

Several scholars researched collaborative innovation in SCs and identified elements and features influencing the outcome. Roy, Sivakumar & Wilkinson (2004) investigated innovation generation in buyer-seller interaction and highlighted that the connection between innovation generation and interactions is slowed down by internal factors, such as trust and commitment, and external factors, such as stability of demand. Besides, in collaboration both action (cooperative activities and communication) and perception (mutual commitment, common goals and trust) is required (Mentzer et al., 2000). When there is an imbalance in this commitment, this could be disadvantageous to temporary knowledge sharing and to innovative collaboration (Roy et al., 2004). Furthermore, scholars found similar elements that can be enhanced by generating innovations in collaboration with SC partners, including competitive advantage (Lee, Olson & Trimi, 2012), reduction of costs, and more sales (Soosay et al., 2008). However, some elements are considered as specifically important when generating innovations in collaboration. Especially regarding the capabilities of the partners and the type of relationship between them can influence the ability to generate innovations in collaborations (Fawcett et al., 2008; Soosay et al., 2008). Hence, for collaborative innovation it is important to consider with whom to partner and take in consideration their capabilities.

Furthermore, the nature of the relationship can affect the generation of innovation looking upstream and downstream in the SC (Roy & Sivakumar, 2010). This could also be related to the probability that different partners in the SC view issues from different perspectives (Bradford, Stringfellow & Weitz, 2004). Besides, the complex context dependent nature of SCs with different structures and actors involved can cause difficulties and influence the intensity of collaborations (Matopoulos et al., 2007). Besides, this is also related to external drivers, such as consumer preferences and regulations influencing the intensity of collaborations and direction of innovation generation (Matopoulos et al., 2007). This is for example highlighted for the agri-food sector, in which it was observed that the structure of the sector and the origin of the products affected the type of activities and level of collaboration (Matopoulos et al., 2007). This indicates that different perceptions of different partners in a certain context can be important to uncover in collaborative innovations in the SC, including determining the influence of pressures from outside. However, little is known about this phenomenon (Corsaro, Cantù & Tunisini, 2012).

Although collaborative innovation generates benefits, organisations often fail in having successful collaboration (Faems, van Looy & Debackere, 2005). This can be related to the heterogeneity of the different partners with varying interests and motivations to engage in collaborations (Corsaro & Snehota, 2011). Thus, indicating the importance of understanding the perceptions of the different partners involved. Research by Skippari et al. (2017) studied the cognitive

barriers in SC partnerships to develop collaborative innovation. They highlight that different perceptions of managers about SC relationships is a crucial barrier and hinder collaborative innovation. This emphasises the importance of aligned perceptions of the SC partners in collaborations. Besides, as stated previously, benefits of SCC are rarely realised because of the differences in interests between SC partners and therefore also indicate the importance to study these differences (Simatupang & Sridharan, 2002). Thus, this indicates that to address certain issues or challenges in the SC through collaboration, and especially collaborative innovation, the perception towards those topics is of great importance for it to succeed. As described above, multiple scholars, both in SCC and collaborative innovation literature, identified and studied elements and features enabling effective collaborations and innovation generation, and thus which elements are required to obtain benefits from. However, as noted that these benefits are often not realised, another approach is potentially more appropriate to determine what is required. Besides, it is not clearly defined how SCC and collaborative innovation is perceived from a SC partner point of view and more specifically customer point of view. Hence, this research focuses on what these different perceptions of customers are towards collaborative innovation in the present partnership. As indicated previously, collaborative innovation is part of the SCC and often dependent on the context, including the partner involved in the partnership, to what extent innovation generation is part of the collaboration. Therefore, it is also important to identify if collaborative innovation is something of interest or whether it is a more 'basic' collaborative partnership approach. In this way, it will become clear what the customers want out of the partnership and what would make it successful.

2.3 Sustainability in collaboration

There is increasing pressure on organisation's responsibilities regarding environmental and social performance, including their partners and suppliers. These pressures can come from different internal and external sources, such as, governments, non-governmental organisations, communities, employees and management (Seuring et al., 2008). Besides, consumers become more aware of environmental and social impacts of the whole SC instead of only the end product. This is for instance observed in the agri-food sector, where there are growing concerns regarding the availability of food and the way agricultural products are produced (Ahumada & Villalobos, 2009; Handayati et al., 2015). Organisations recognise that to stay competitive in an increasingly aware world and changing markets, they need to address these environmental and social issues. More specifically, sustainability is seen as a complex, current and very important issue that needs to be addressed in the SC. The best way to manage sustainability in SC partnership is through collaborations (Seuring & Müller, 2008; Touboulic, Chicksand & Walker, 2014). Collaboration is important for enhancing competitive advantage of the SC and reducing costs and uncertainties (Beske & Seuring, 2014). Thus, suggesting that when focusing on sustainability issues in the SC, interaction, and collaboration with partners in the SC is of great importance. Many issues around sustainability topics are hard to tackle, therefore collaboration could be really effective when focusing on the whole SC where suppliers and customers work together to face these issues. These issues can be addressed through collaboration by, for instance, improving practices in the SC. But this can also entail new product or service opportunities for which collaborative innovation is increasingly important (Greer & Lei, 2011). As innovation generation is often necessary to deal with market challenges (Skippari et al., 2017), this suggests the potential to do that for sustainability in the SC. This highlights that sustainability can be both addressed through SCC and collaborative innovation. For these, shared visions, common goals, trust, and commitment are required (Gold et al., 2010). Criteria for sustainable SCs are that the members of the SC fully fulfil

environmental and social aspects and at the same time maintain competitiveness through customer needs and related economic aspects (Seuring et al., 2008). This differs from conventional SCC, as it includes a sustainability criterion and that organisations aim to pursue all three dimensions of sustainability (Beske & Seuring, 2014). Besides, when addressing sustainability in collaborations, organisations pay equal attention to all dimensions, whereas conventional SCC organisations tend to focus more on the economic dimension.

Previous research on SCC to facilitate sustainability is extensive (Gold et al., 2010; Seuring & Müller, 2008). Seuring and Müller (2008) conducted a literature review and created a conceptual framework, including triggers for addressing sustainability in the SC. These triggers start with pressures and incentives from the government, customers and stakeholders. These external pressures could include, environmental laws and regulations, stakeholder demand, and interest groups (Alblas, Peters & Wortmann, 2014). More specifically when focusing on organisation-customer collaboration in the SC downstream, customer pressure is of great importance as they are part of the SC and need to accept the final products or services (Seuring & Müller, 2008). This suggests that it is relevant to improve acceptance of the customers by uncovering the customer's needs and perceptions towards sustainability as part of SCC. Other researchers have studied reasons for SC partners to address sustainability in collaborations. For instance, Saeed and Kersten (2019) identified drivers for addressing sustainability solutions in the SC. They found that market and regulatory pressures are the most dominant drivers for implementing sustainability practices. Also, internal organisational drivers are identified, which are related to obtaining benefits out of the collaborations, which can include desire to reduce costs, create value for stakeholders, gaining competitive advantage and improve performance (Walker, Sisto & McBain, 2008). Both these external and internal factors highlight drivers to start implementing sustainability in SCC practices.

There are also some issues identified that are difficult in SSC and therefore influence the success of sustainable SCC. These issues are related to that often, in the short term, divergence in interests of the different members cause conflicts in commitment to collaboration and fully share information (Holweg et al., 2005). Besides, current businesses are often complex, which means that it is very difficult and almost impossible to implement external information sources of all partners into business practices (Holweg, et al., 2005). Furthermore, a major barrier for collaboration is the lack of understanding towards whom and when to collaborate, and what it implies (Barratt, 2004). This confusion can come from, for example, the scalability of collaboration, which includes a large number of suppliers and customers. In turn, this creates confusion about the value of collaboration. Besides, confusion around definitions and concepts in sustainable SCC can create confusion amongst partners (Dania, Xing & Amer, 2018). These observations indicate the importance of getting a better understanding of the different perceptions of SC partners. Hence, when studying sustainability perception in the SC, it is important to understand how the specific individual partner involved in collaboration perceives sustainability and what topics are especially important to address.

Furthermore, there are several case studies investigating SCC in combination with sustainability or the environmental/green dimension (e.g., Azevedo et al., 2018; Chin et al., 2015). These studies also take different points of views when studying SCC, including the relationship with the customers downstream (e.g., Kim & Lee, 2018). Furthermore, several studies focus on the effect of sustainable SCC on the sustainability performance (e.g., Pakdeechocho & Sukhoto, 2018). However, studies related to differences in perceptions of SC partners and, more specifically, the different perceptions of customers in SCC, including sustainability, is missing. Especially literature related to how sustainability perception influences the present partnership, that includes SCC and/or collaborative

innovation, is missing. This is important to study because differences in interest and variance between the partners often cause unsuccessful collaboration and with the increasing pressures to address sustainability in the SC, alignment needs to be generated. As it is identified that factors for successful collaborations are not well understood for implementing sustainability (Ramanathan et al., 2018), it could be useful to study the perception towards present collaborations and how sustainability can affect that. Especially in the agri-food sector, which is facing many (sustainability) challenges, unravelling the perceptions of different partners can be of high relevance. By taking a closer look at the present partnerships and how collaboration and collaborative innovation is perceived, it can be identified how sustainability can be best incorporated and what issues are of key importance. In sum, this research aims to get a better understanding of collaboration practices, including collaborative innovation, in the present partnership by studying different perceptions of customers in the agri-food SC. Besides, by studying the different perceptions towards sustainability a better understanding can be obtained on how sustainability affects the present partnership and how it can be promoted.

3 Methodology

The research interest of this study was to get a better understanding of what is required to have effective SCC and how collaborative innovation and sustainability as part of collaboration is perceived. This was done by taking a closer look to the animal nutritional company Trouw Nutrition (TN) and its SC. More specifically, the collaboration between TN and its different customers was researched. The research aim of this study was two-fold. The first aim was to uncover the perceptions of different customer groups towards present partnerships, including collaborative innovation in the SC. Besides, to get a better understanding of those different perceptions and to understand why it is happening this way, the aim was to identify the underlying reasons and motives of the different partners in the SC to collaborate. From this, an overview of the perceptions of the different customers and the underlying reasons to collaborate and innovate could be provided, to get a better understanding of the collaboration phenomena in SCs. The second aim was to get a better understanding of how the different partners perceive sustainability and how this affects the present partnerships in the SC. In this way, it can be identified how sustainability can be best promoted when looking at the present partnership characteristics and where potential mismatches lay when addressing sustainability in the SC.

3.1 Research design and setting

To answer the research questions, a single case study research design was taken using an inductive qualitative approach to gain a deeper understanding of what the perceptions of TN's customers are regarding SCC, including collaborative innovation and sustainability. Taking this approach made it possible to find underlying motives and argumentations of the customers towards the studied topics (Bryman, 2016). This research used TN and its customers as an empirical setting for the case study. TN is an animal nutrition company, which provides nutritional solutions for different species (ruminants, swine, and poultry), including feed concepts, nutritional knowledge, and products (Trouw Nutrition, 2019). They offer products, such as, premixes, feed additives, and minerals, models, and services to the customer. TN is an internationally oriented company with production sites and support teams all over the world. Hence, customers of TN entail many types of customers located in different regions and can be divided in different customer groups. Besides, these customer groups can be located in different parts of the SC. See Figure 2 for the SC of TN researched in this study, which consists of business customers (B2B) and farmer customers (B2F). TN serves the farmers directly or indirectly via B2B customers. The customers interviewed in this research can be separated in four customer groups: feed producers, dealers, integrators, and farmers (see Figure 3 for the position of the customers in the SC). In the figure, the different locations of the customers interviewed are not taken into account, but the main focus was on customers located in Europe (see Appendix A for an overview of participants and different regions).

The first group, the feed producers, consist of companies that produce animal compound feed for which they need ingredients, such as minerals, supplements, or other substances from an animal nutrition company, for example TN. These companies deliver the compound feed to the farmers and/or to the integrators. The second customer group, the dealers, are companies that resell products of TN to farmers, including distributors and wholesalers. In some cases, these companies also make and market their own product next to reselling products of partners. Dealers often operate in a broader range of agri-food products, including hardware and other farm-related supplies. The third group, the integrators, are food production companies who have control over a larger part of the SC,

often including, animal farming, slaughtering and product processing. The integrator also owns or hires the farms, including the farm manager, where the animals are fed and managed according to their requirements until they are transported to the slaughterhouse or processing plant. In this way, the integrator has control over the whole lifecycle of the animals from when they are a few days/weeks old until the processed product is sold to the retailer. These companies can be direct customers of TN or indirect (via the feed producers) of which they buy animal nutrition and get support in nutritional solutions. The last customer group entail the farmers that buy animal nutrition directly from TN, or indirectly through dealers or feed producers.

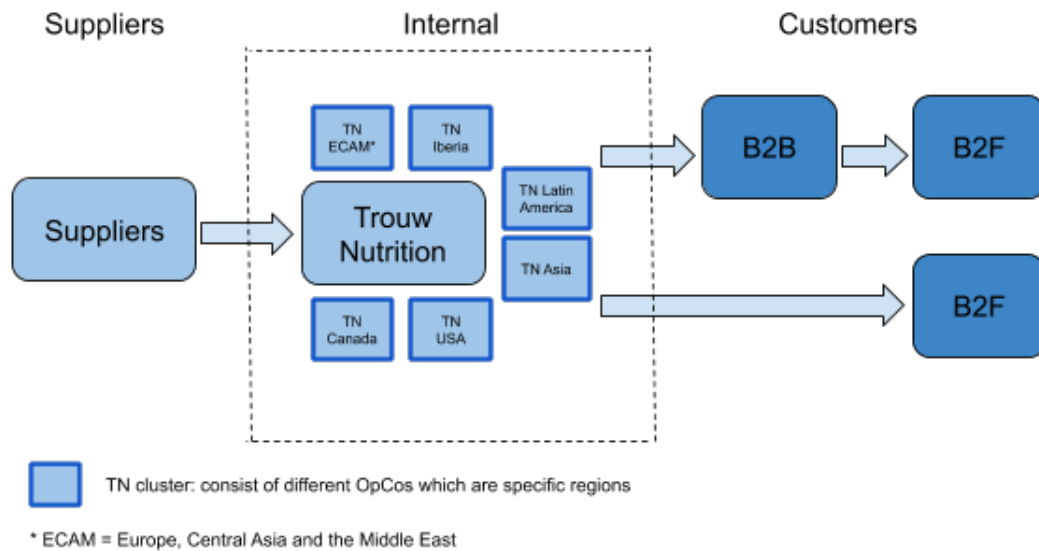


Figure 2. The supply chain of Trouw Nutrition, highlighting the different regions in which Trouw Nutrition supplies both business to business (B2B) and to farmers (B2F).

TN and its SC was an appropriate case to study this phenomenon as TN shows grounded interests in innovation (and is well known for its R&D) and sustainability. Besides, the complexity of the SC with different types of customers made it an interesting case to uncover the different perceptions in a single context. Because the different customers studied are part of a single context, it made it possible to build comparisons between the different perceptions towards partnerships, including certain issues that can be addressed in the SC (e.g., innovation generation and sustainability). Based on this comparison differences could be identified which are important for determining what the best way is to implement types of collaborations with a specific customer.

3.2 Data collection

The data collection of this study consisted of interviews conducted with 20 customers of TN (see Appendix A for an overview of the customer interviewed, including the duration of the recording). Conducting interviews was suitable in this case as it provided rich and detailed insights into the perceptions of the customers towards the studied phenomenon (Bryman, 2016). The customers interviewed were selected based on the SC of TN. By studying different customer groups in a single social context (the case of TN's SC) suggests that the parallel between the groups is sufficient enough to make comparisons (Ragin, 1997). As described previously, the customers of TN can be categorised in four groups: feed producers, integrators, dealers, and farmers. These customer groups have

different functions and are located in different places in the SC, which will create a more holistic approach to the phenomenon studied (see Figure 3 for the different SC levels and the number of interviews conducted). These groups were selected because SCC occurs between these different partners and TN in the SC. Besides, studying different customer groups made it possible to compare different partnerships in the same SC and to minimise extraneous variability (Eisenhardt, 1989). Additionally, studying these different customer groups downstream is relevant to get a better understanding of how collaboration and collaborative innovation for sustainability in the SC can deliver a benefit in the most effective way, because the customers are the ‘users’ and thus need to accept the product/service (Roy & Sivakumar, 2010; Seuring & Müller, 2008). The comparability of the different groups was ensured as the customers share the same supplier (in this case TN) and serve the same type of end customers. Of each group, a comparative set of interviews was collected, and data saturation was reached when certain information was repeated during the interviews. Besides, additional interviews were conducted when certain things were perceived as uncertain by the researcher or when additional insights were required. This was for instance the case with the farm interviews located in Spain. The interviewees could not speak English, therefore a translator from Spain was present. However, there were some difficulties in obtaining all the information in enough depth. Hence, the interviews were quite short and contained a lower level of content. To get a better understanding of how the farmers perceived the studied phenomenon and to be able to contextualise, an additional interview was conducted with a farmer in The Netherlands.

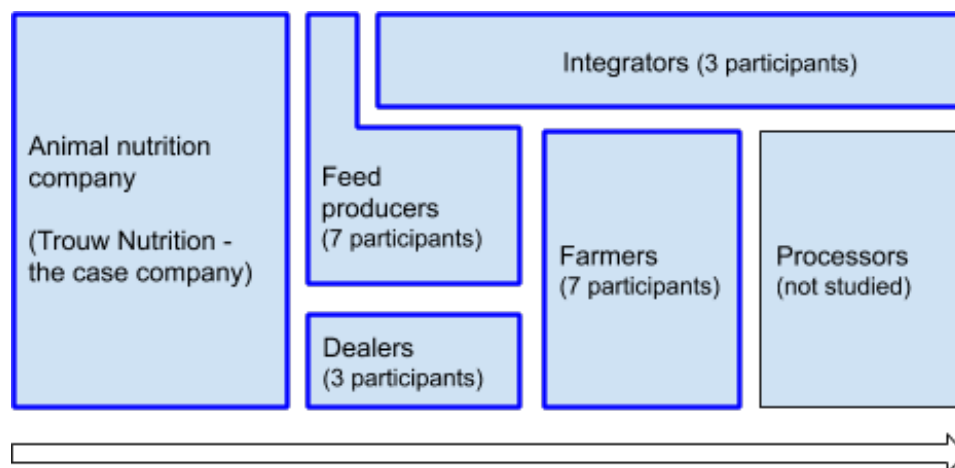


Figure 3. Supply chain levels and number of interviews conducted per level.

The interviewees selected were based on purposeful sampling and the sampling criteria was based on the following attributes. First, organisations of each customer group located in Europe were selected (an exception was made for two participants as they have similar business focus). Customers located in Europe were appropriate as the type of companies have similar ways of operating and often with an international focus within Europe. Besides, TN is a multinational company with customers all over the world, so to be able to compare the different perceptions of different customers, including different regions was appropriate. Second, the relationship between TN and the customer needed to be an already well-established partnership with mutual understanding. Often it is identified that successful innovation generation and addressing sustainability issues in the SC is influenced by internal factors such as trust and commitment in buyer-seller interaction (Gold et al., 2010; Roy et al., 2004). Hence, the second attribute was that the present relationship between TN and the customer needed to be an already well-established partnership with mutual understanding. This increases the

probability of future collaborations, including addressing collaborative innovation and sustainability. Third, customers needed to be important partners for TN to collaborate with in terms of future opportunities and with whom the potential is higher to have effective collaboration. When addressing future challenges with partners in the SC, the probability is higher to do this with customers of greater value to TN as this often involves long term collaboration. Lastly, further sampling occurs according to the findings, thus, further selection of the participants depended on the findings, to ensure the alignment with answering the research question. This sample is the most insightful as these customers were expected to be the most willing to collaborate in the future and will give the most important insights to ensure effective collaboration and to address sustainability.

The participants were selected based on their function within the organisation. They needed to be involved with the (sustainability) strategy of the organisation and have knowledge about the organisation's SC operations. Typically, interorganisational collaboration happens on middle management and operational level (Skippari et al., 2017). Therefore, middle managers were interviewed. Furthermore, the participant's perception on collaboration needed to be key for further collaboration and representative to decision-making in the future.

A semi-structured approach was taken to conduct the interviews. This is an appropriate approach as it will guide the researcher, but also leaves room for flexibility (Bryman, 2016). The aim of the interviews was to get the interviewee's perception on SCC, including addressing certain issues (collaborative innovation and sustainability) and to find out the different interests and motivations. This was done by focusing on three topics: 1) collaboration or partnerships in general, 2) collaborative innovation as part of collaboration, and 3) sustainability as part of collaboration. The questions consisted of open questions to reassess the participant's perception. Questions asked were based on how to get the best insights into the different perceptions of the interviewees regarding the three topics (see Appendix B for the interview guide). These questions were related to what the customer's motivation is to collaborate, how they currently collaborate and how they want it in the future, what is required for them to do so, and what further potential do they see for collaborations. Besides, questions were asked addressing more specifically collaborative innovation and sustainability as part of collaboration. In this way, it could be figured out where common ground was met and where it did not between the customers. All interviews were conducted either in person, via Microsoft Teams, or by phone and are all recorded and transcribed.

In addition to the customer interviews, four managers from TN were interviewed to get a better understanding of how the partnership was perceived from the other side (see Appendix A). Besides, by interviewing TN employees, further clarification could be given to the context and the insights from the customer interviews.

3.3 Data analysis

For analysing the interviews, two approaches were used. The first part of data analysis involved analysis of the individual interviews, which consisted of thematic analysis bottom-up to identify why the participants are 'doing it like the way they are doing it'. This was done by coding the individual interviews using NVivo. The guidelines of Gioia, Corley, and Hamilton (2013) were used, which provided a coding process with first-order codes and categories, second-order themes, and aggregated dimensions. These guidelines were used because it enables more creative imagination and systematic rigor in conducting inductive research (Gioia et al., 2013). First, the interviews transcripts were read, and parts of sentences were coded that were found relevant. Second, the codes were observed to identify similar patterns and elements related to collaboration, including collaborative innovation and

sustainability that were perceived as important for the interviewees, which were inductively grouped into first-order categories. Next, the first-order categories were grouped in second-order themes. The names of the themes were created by identifying similar codes and checking for contextual patterns. Finally, the second-order themes were combined in aggregated dimensions. During the identification of themes and dimensions, existing literature was consulted to help structuring these. Figure 4 shows the data structure that emerged from the analysis, which was used to describe what the perceptions are of the different customer groups. This is visualised by first-order categories, second-order themes, and dimensions, describing the foundation of what is taken into consideration when collaborating in the SC (Gioia et al., 2013). The identified themes are leading in the perceptions towards collaborative innovation and sustainability between the different customer groups.

Next to the individual customer analysis, a summary of each customer group was created to be able to create an overall picture of each case taking a top-down approach. In other words, it consisted of detailed reading of the individual interviews across the studied groups from which an overview was created, including the key elements found important to each customer group towards the present partnerships and addressing certain issues (sustainability and innovation). To make sure that the data structure created by the overall analysis was in line with the specific groups, these elements were checked if these were included in the first-order categories and part of the second-order themes. This functioned as a checkpoint to ensure that the data was understood through the eyes of the interviewees instead of the created analytical structure. Besides, the overview of the customer groups provided insights into what the meaning was of the identified categories and themes for that specific group. In this way, a better understanding of the data was obtained and made it able to identify differences among the groups on which could be elaborated on. This provided the possibility to identify similarities but also appreciating the differences between the different customer groups.

During the process, it was identified that how the different customer groups perceive sustainability could alter the perceptions on partnerships and collaborative innovation to some extent. It emerged that sustainability could have an effect on the identified dimensions/themes and that some themes could have different effects on promoting sustainability. Hence, a model was created that highlighted the relationships between the identified dimensions and themes, and how sustainability could affect these.

3.4 Quality assurance

The validity of this study was assessed by using the five quality criteria of Maxwell (1992), including descriptive validity, interpretive validity, theoretical validity, generalisability, and evaluative validity. All criteria are discussed by giving a description and explaining how it is assured in this research.

The first quality criterion is descriptive validity, which means the factual accuracy of the data. By recording and transcribing all interviews, it was assured that the data was accurate, and no misinterpretations were made about what the interviewee said.

The second quality criterion is interpretive validity, which is whether the interpretations made by the researchers are really a reflection of the perspective and interpretations of the interviewee. During the interview, this was assured by asking follow-up questions during the interviews and regularly repeating and summarising statements to check if the interpretation of the participant is correct. Besides, meetings and interviews with TN employees, which are in close relationship with the customer, made it possible to gain a better understanding of the context and the different customers studied. Furthermore, the different perceptions of the different customer groups towards a single context could influence the interpretive validity of the researcher. In this case, the order of analysis

(and even the order of conducting the interviews) could have a potential influence on interpreting the data and identifying themes. As different customer groups are compared this can be problematic as this reduces the possibility of identifying interesting underlying insights and being able to view the world through the individual's eyes. Consequently, the analysis of the data and interpretations of the findings could possibly be adapted by the participants studied. This research dealt with this limitation by creating a summary of each customer group (by thoroughly reading the individual interviews and creating an overview) to ensure that the data structure created from the thematic analysis was really a representation of the customer's perceptions towards the studied phenomenon.

The third quality criterion is theoretical validity, which consists of construct and causal validity. Construct validity concerns whether the theoretical concepts established by the researcher correspond with reality. By taking an inductive approach, constructs were obtained directly from the data, which made the construct aligned with the described phenomenon. Causal validity refers to the explanations of the researchers and if this aligns with reality. This was to some extent assured because there was only one researcher. Therefore, it was difficult to discuss the findings with others. By considering alternative explanations and by discussing possible explanations with my supervisor causal validity was to some extent assured.

The fourth criterion is generalisability, which consists of internal and external generalisability. Internal generalisability refers to whether the studied interviewees can be generalised within a group. In the case of this research, this also relates to if the individual customer interviews conducted for the specific customer groups were appropriate. The customers interviewed are in most cases well established and well-known companies in the industry suggesting that the account can be generalised within the groups. However, in one customer group studied (the dealers), the perceptions of one participant deviated quite substantially from the other participants interviewed of that group. This was observed as two of the three interviewees showed little to no interest in collaborative innovation and addressing sustainability in present collaborations and in the future whereas one dealer did show interest. This could suggest that the customers interviewed in this group did not represent the group. To address this, these differences are well highlighted and based on the findings it is suggested that this group probably can be divided into two groups, namely based on the expertise and focus. External generalisability refers to whether the studied groups are generalisable to another population. This is not part of qualitative studies. Nevertheless, this does not take away that the findings of this study can be relevant for other cases in other sectors or situations.

The last quality criterion is evaluative validity, which is the moral judgements made by the researchers. This was assured by not making any moral judgements in this research.

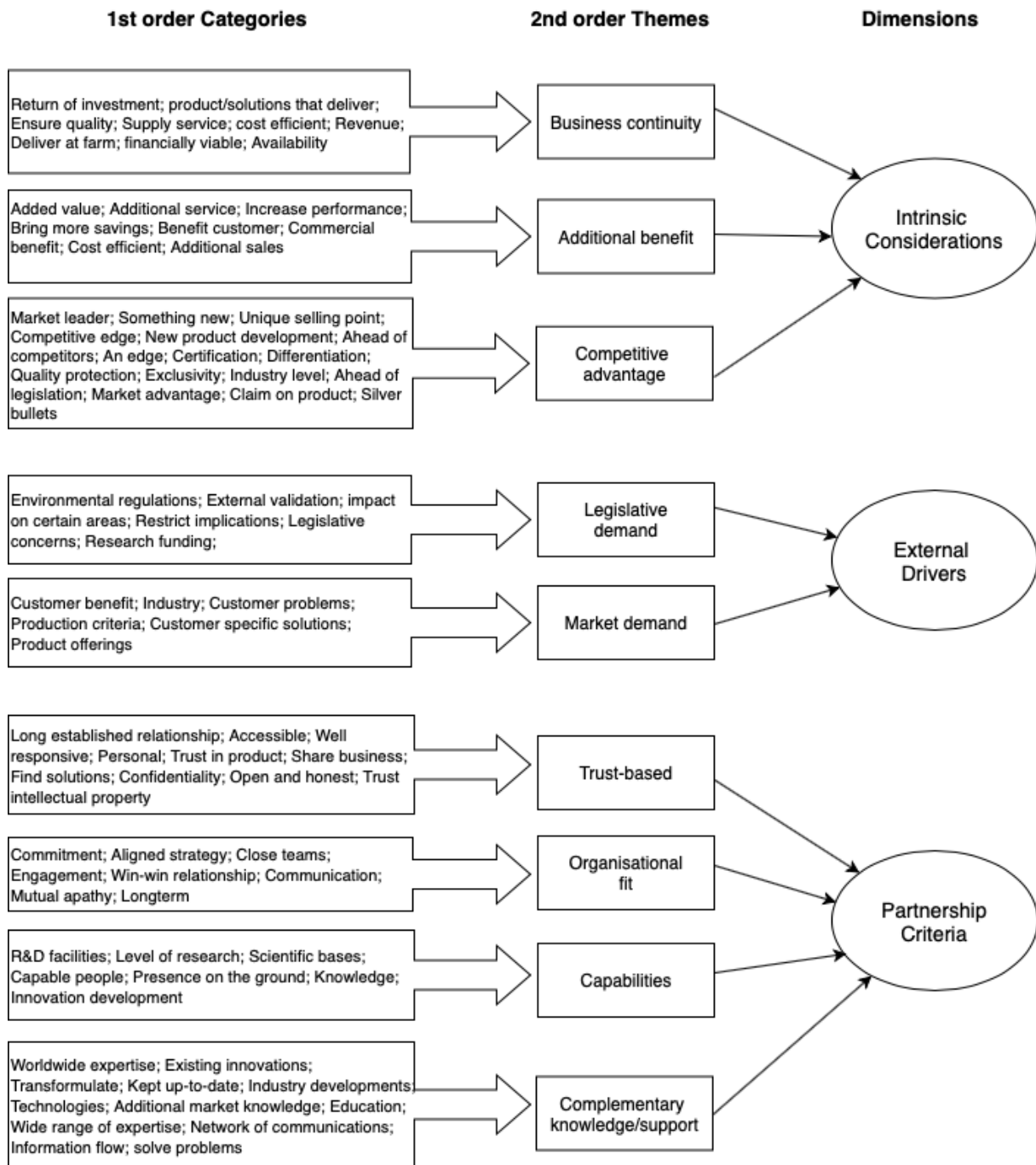


Figure 4. Data structure

4 Findings

In this chapter, the findings are presented to answer the research questions. The first research question is answered by addressing the perceptions of the different customer groups towards the present collaborations and partnership, including innovations, which is called 'partnerships as usual'. The second research question is answered by taking a deep dive into how they perceive sustainability and how this is related to the identified themes in the present partnerships.

4.1 Partnerships as usual

In this section, the perceptions of the different customer groups are explained towards partnerships in general and collaborative innovation in the SC. To get a better understanding on how to address certain issues in the SC (e.g., sustainability) with certain customers, first the present partnership must be understood, which is indicated here as partnership as usual. In this way, it is determined what important elements are in the present collaborations and what issues are already addressed or have potential to be addressed in the near future. From the data analysis, a data structure emerged (Figure 3), which highlights that on an abstract level, similar things are found important to the present partnership for the different customer groups. These common elements (called themes in Figure 3) are categorised in dimensions, which are intrinsic considerations, external drivers, and partnerships criteria. The intrinsic considerations and external drivers consist of elements that are important motivators for the customer groups to start collaborations in the present partnership and that these needs to be ensured. Whereas, partnership criteria consist of elements required to address the internal and external motivators being important specifications that a collaborative partner should meet. Despite that on an abstract level the customer groups want similar things, what these exactly mean differs between the groups. Table 1 gives an overview of the different interests in which the different meanings and priorities of the influencing elements are highlighted for each customer group. In the following section, the differences in perceptions between the customer groups are explained according to the identified dimensions, including describing the elements of which they consist. In this way, comparisons are made between the groups with the main focus on the present partnerships highlighting the differences between the partners.

Table 1. Overview of the interests of the different customers towards the identified elements important to the present partnership.

Dimensions	Themes/Elements	Feed producers	Integrators	Dealers	Farmers
Intrinsic considerations	Business continuity	Benefit required for doing their business Return on investment Product/service that works for their customer Innovations to continue business operations	Product/service that works for their customer Ensure high standards of quality of final product	Main focus on revenue and increasing sales Offering big range of products to the farmer Offer good quality products	On-farm support to stay in business Main focus on animal performance and product delivery Decrease cost of production or increase animal performance
	Additional benefit	Continuously improving their business and create new opportunities Additional service/solution to increase performance or savings for their customer	Continuously improving their products/services Support in finding new solutions	Create additional sales Offer new solutions to the customer	Additional benefit related to nutritional system or animal performance
	Competitive advantage	Gain an advantage in the market through new ideas and innovations Differentiate themselves by having Unique selling points in the local market New product development	Advantage to protect their products in the market Find ways to differentiate Create a market lead	Not identified as an intrinsic consideration for partnerships	Not identified as an intrinsic consideration for partnerships
External drivers	Market demand	Direct customers (farmers) or further down the supply chain (retailers, consumers) Related to certain on farm problems, specific solutions or product criteria	Consumer demand main driver for new projects Try to stay ahead of consumer demand (certification or label)	Constantly fulfilling the wishes of the farmers by offering range of products and services	Demand from the food industry (food processors) and retailers Deliver certain product standards
	Legislative demand	Comply with existing legislation Try to stay ahead of future legislation	Comply with regulations Try to predict future legislation	Complying with existing regulations, not a driver in partnerships	Awaits legislative demand to address certain issues
Partnership criteria	Trust-based	Long-established relationship required Confident to share their business Partners come up with solutions	Reliable partner that delivers quality products Trust that the partner keeps providing good services	Reliable and delivers when needed Well-established relationship	Trust in providing good service Solving problems regarding the animals Trust is key for a good partnership
	Organisational fit	Understanding from both sides Share same visions Aligned strategies with win-win mentality	Win-win partnership Both parties keen to keep improving Commitment from both sides	Buyer-seller relationship Representative well responsive Good fit with the representative	Well responsive partner Commitment from both sides Easy communication and regular visits
	Capabilities	Capabilities and accessibility of the representatives Research facilities to deliver science-based principles High level of R&D	Expertise of partner Provide nutritional plans and scientific bases High R&D level	Accessibility of the representative Find solutions when required for their customers	The level of capabilities and knowledge for providing support on farm Quick action-reaction
	Complementary support	Additional technical service to support their customers Additional knowledge support for gaining additional market knowledge International focus and expertise	Commentary knowledge to reach high standards of quality Continuous research to obtain scientific proof International knowledge	Provide support when needed Provide education or training regarding the products	Dependent on the wide range of expertise of partners to run their business

4.1.1 Intrinsic considerations

The intrinsic considerations consist of elements that are important motivators to start a collaboration or collaborative innovation and often at least one of these elements needs to be ensured in the present partnership. These elements are business continuity, additional benefit, and competitive advantage, and are addressed accordingly.

Business continuity

First of all, partnerships need to contribute to business continuity of the company. This means that business operations and functioning needs to be ensured through partnerships. How this exactly can be done differs between the groups, which is closely related to what their business precisely entails. For feed producers, business continuity means that there needs to be some sort of benefit coming out of the collaboration that is required for them to do their business and that will create a return on investment. As AgriFeed stated: *“if what you’re paying for this service or collaboration and it does not bring a return on this investment, then the collaboration has to stop because then it doesn’t make sense. I mean, today you have to realise something from this collaboration, which is very important. That’s key for it to succeed.”* This can relate to having a product/service that simply works and delivers for them and their customer, but it can also be about innovating together or addressing a sustainability issue that is required to continue business operations. The feed producers work in close relationship with the farmers (which are their customers), thus, they aim to constantly improve their products based on the farmers’ needs.

The integrators also aim to have a good product/service out of the partnership that delivers at farm level. However, compared to the feed producers, the main focus of the integrators is on having control over a larger part of the SC (e.g., the whole lifecycle of the animal) instead of only the ‘feeding part’ of the animal. Hence, for them it is important to deliver an end product (e.g., meat product) with high standards of quality and prove that to the end consumer. Hence, for business continuity, the quality of the final product needs to be ensured. As stated by ScaleIntegrator: *“All the decisions made together are driven, are aimed to reach the best quality, because the first point for us is to have a consistent and high quality of meat”.*

The perspective of the farmers towards partnerships is more ‘basic’ compared to the feed producers and integrators. The intrinsic motivations regarding collaborations are mainly focused on how their animals are functioning (health) and react to the product/service with less focus on the technical specifics. The objective is to decrease the cost of production or to increase the performance of the animal. Therefore, the farmers emphasise the great importance of having on-farm support as part of the partnership next to delivering a quality product that works, needed for business continuity. As stated by JanFarm: *“A number of issues are important, among others the quality of feed and then also the quality of the service, so the advice. [...] well then you want the advice to be good and that there is also someone who is knowledgeable”.* The underlying reason for this is that they are dependent on that support to stay in business, which means animals that have a low performance means no business means less turnover for the farmer.

The main focus of the dealers is on reselling products with some technical support and knowledge from the supplier towards their customers (the farmers). Most of the dealers interviewed described it as a simple buyer-seller relationship and showed no interest in having a more partnership-based relationship, including collaborative innovation. Hence, the focus is on revenue and serving customer-specific solutions needed for business continuity. The underlying reason for this is that they

see themselves as a more retail-focused company (thus simply buying and selling) in which they offer a large range of products. As stated by DaDealer: *“In that respect, we are far too much retail. So, buy a number, sell a number, buy the next number, sell, done. [...] And we have representatives who are knowledgeable so you can get some extended knowledge there, but otherwise it just ends immediately. It’s just retail sales, purchasing, sales”*. Hence for business continuity, it is of importance to offer good quality products (A-label brands) that deliver added value to their customers in different segments. Therefore, the dealers seek to have partnerships with suppliers that can deliver those quality A-label products and fit into their product collection. In this way, the probability that their customer purchases more items, thus increasing sales will be ensured.

Additional benefit

For all the customer groups, it is observed that in addition to ensuring operations and business functioning through collaboration, thus ensuring business continuity, obtaining some additional benefit from a partnership is key. This means that the collaborations need to give something ‘extra’ to their business performance and that it is often not just about business continuity. How this additional benefit can be ensured differs between the customer groups, but often this is related to collaborative innovation to be able to create that bit of extra, which is less (or not) crucial for business continuity.

The main focus in a partnership for the feed producers is on continuously improving their business and creating new opportunities. They seek to have partnerships where there is an additional benefit, which can consist of some sort of additional service or a solution that will increase performance at farm level or bring more savings. As stated by BretFeed: *“it has to give me a big selling point in my marketplace [...] and a product that adds value. So, the whole part for me is getting products or sourcing products and putting them together in a collaborative way. And then that it is delivering some value added to the customer in terms of their overall business”*. In this collaborative innovation is seen as a way to way forward to obtain that additional value.

As highlighted, the integrators seek to produce high quality end products. Hence, it is highly relevant for them to obtain some additional benefit that can ensure this. This could entail additional services, such as on farm support, or finding new solutions (e.g., new product development). This is pointed out by ScaleIntegrator: *“Another aspect to this partnership is continuous research. We haven't already reached the final point; we need to keep researching and finding new solutions to keep improving and keep reaching new targets”*. Thus, similar to the feed producers, the integrators seek continuous improvement of products/services in a partnership and search for that additional benefit through collaborative innovation.

For the farmers, it is observed that they show interest and are in favour of participating in collaborative innovation projects when this can deliver some additional benefit to the farm. In this, the main objective is to increase the nutrition system (e.g., new technologies to increase health) or the performance of the animal. Stated by LinFarm: *“if the proposal is interesting, because it is good for my farm, for the feed conversion, daily gain or quality meat, then okay”*. Specifically for farmers who want to deliver high quality products (e.g., meat with low fat infiltration or a certain colour of meat), find it of high value to constantly improve the performance of their animals, hence, they seek to have an additional benefit through collaboration delivering that improvement. They do emphasise that the proposal for an innovation project, including execution and investment need to come from the supplier, but they are willing to cooperate by testing new products and innovation in a trial farm. As stated by LucioFarm: *“good idea to make an agreement for a new collaboration [...] making an agreement to be a control farm [...] an agreement where TN pays some money to do the tests at the*

innovation farm". This indicates that compared to the feed producers and the integrators, the farmers have a more wait-and-see attitude towards partnerships in which the collaborative partner needs to initiate a new opportunity and convince the farmer that it will deliver an additional benefit.

As described above, the main focus of the dealers is on revenue and selling as many products as possible. Hence, if there are opportunities for an additional benefit, in this case additional sales, they will be much in favour. An example of this is by giving TN access to their web shop, mentioned by DaDealer: *"as part of the agreement we decided to make representatives of Trouw Nutrition active on our website with login codes so that they can also sell, this helps me with sales and on margin"*. Remarkable is that one customer deviates from the aforementioned findings. This customer does have interest in contributing to collaborative innovation through new product development by giving suggestions about the formulation of products. As stated by FeDealer: *"I asked if it was possible to put certain ingredients in a product, which they investigated and in the end a product came out of it. And like that we have several more products that we developed together"*. The participant recognises the benefit of discussing new ideas and opportunities. This deviation can be explained due to the fact of having a different business focus compared to the other dealers, since this customer also produces its own feed products in addition to reselling products, thus, having more in-house expertise and greater sales in animal nutrition products. Hence in this case, creating an additional benefit is next to additional sales also focused on new product opportunities and innovative solutions (e.g., reformulation of products). This could indicate that the customer group consisting of dealers can be divided into two groups, namely dealers that only resell products and dealers that produce and resell products, which have different perceptions about partnerships in the SC. Based on this observation it can be suggested that in-house expertise around product development (e.g., formulation of product and effect on animal performance) is important for the focus of collaboration. In other words, when a customer has more in-house knowledge regarding animal nutrition the focus of the partnership will be more on research and innovation.

Competitive advantage

The last intrinsic motivator identified in this study is gaining a competitive advantage, which means that through partnerships and collaborative innovation the partner wants to create a way to differentiate themselves in the market and become a market leader. This is observed as a key motivator for two of the four customer groups, namely the feed producers and the integrators. Regarding these customer groups, they often seek more than just an additional benefit and seek to have partnerships that can deliver a competitive advantage or make it able to differentiate themselves in the market. As observed by the feed producers they aim for partnerships where new ideas and innovations keep coming to gain a competitive advantage in the market and to deliver a benefit to their customers (the farmer). As ThomFeed stated about what is important in a collaboration: *"Anything that will give us a competitive market edge, and anything that will address a solution or improve performance or health of our customers"*. It is key to differentiate themselves by having a unique selling point and be relevant for their customer. They emphasise that new product development is an important part of collaboration and they rely on their supplier to create a market edge for gaining a competitive advantage. It is all about creating unique solutions for the local market where exclusivity is important. The feed producers emphasise that it is an ever-changing market, where new innovations are key and see the importance and need to do this in collaboration with partners in the SC. For example, KerFeed said: *"The most important motivator is an edge. I want to be ahead of my competitors. I want something different. I suppose it is an ever-changing market [...]"*

would be very interested in all those things [e.g., sustainability], whatever partner I choose, keeping me up to date with it". The feed producers share a strong interest in collaborative innovation and sustainability as part of collaborations and in some cases, it is already part of current partnerships.

Similarly, the integrators find it also of great importance to gain a competitive advantage and seek to have partnerships where new opportunities are addressed through collaborative innovation. The reason for this is that to protect their products in the market, they need to continuously improve their business, and focusing on new innovations is the way forward. Certification for instance, is seen as a way to differentiate from competitors and to keep a leading position in the market. As stated by AzolIntegrator: *"We have to protect our meat market [...] And if we want to protect our market, we have to add additional information to the label [...] It is the only way to protect our national market"*. To accomplish this, the integrators also start partnerships with third parties, including the government and universities, and are thus not only reliable on the supplier when implementing innovation in collaborations.

As highlighted previously, creating a competitive advantage is for the farmers and for the dealers not identified as an intrinsic consideration for collaborations. During the interviews, there was no focus on differentiating themselves or gaining a competitive edge when collaborating. It is mainly about staying in business and performing in the most cost-efficient way (farmers) or making sales (dealers). When addressing certain issues (e.g., collaborative innovation), this is in most cases driven by external factors instead of intrinsic considerations, discussed in the next paragraph.

Summarising, respecting the intrinsic considerations it can be indicated that different motivators are of importance for the different customers to collaborate. The dealers are mostly interested in ensuring business continuity and to some extent additional benefit through collaborations. In this, the majority of dealers interviewed show no interest in collaborative innovation. However, one dealer deviates from this, which can be possibly explained due to the in-house expertise and slightly different business focus. The other customer groups show interest in collaborative innovation of which the feed producers and integrators already see it as something important for business continuity, and essential for obtaining an additional benefit and being able to gain a competitive advantage. The farmers also show interest in collaborative innovation but await the initiative from the partner and are less technically involved. Overall, collaborative innovation is mainly useful when creating additional benefits and especially for gaining a competitive advantage.

4.1.2 External drivers

Besides having intrinsic drivers to start collaborations and/or address collaborative innovation, there are often external drivers 'pushing' the customer to start working on a specific topic. The external drivers identified are market demand and legislative demand.

Market demand

Demand from the market is often closely related to the elements identified as intrinsic motivators and can determine the direction of the issues addressed in partnerships. The feed producers highlight that market demand can come from their direct customers (farmers) or further down the SC (retail, end consumer). According to customer demand, it often relates to certain problems, specific solutions, or product criteria, which drives the feed producer to address certain topics in collaboration. They state that nothing can go at the expense of their customers, and that their needs are constantly taken into consideration. RoFeed stated: *"The seat is very often from our customers. It's there that we identify, find the need and trying to bring that forward"*. Further down the SC, demand is often concerned about

how the product is developed and if this is done responsibly along the chain. The feed producers see an increasing demand from retailers regarding sustainability. Hence, especially for new collaboration projects, such a collaborative innovation or addressing sustainability, external demand is key. This is highlighted by ThomFeed: *“the retail organisations now are asking us and our producers, what are you doing in terms of soil usage, what are you doing in terms of carbon footprint. So, we have to react, and we have to position, to provide what they are looking for as well”*.

The integrators also highlight the importance of market demand for new innovation projects, which is mostly related to the end consumer as they have control or own a larger part of the SC (including processing and packaging). When starting a new collaborative project, often the main driver to initiate this is related to final consumer demand, as stated by ScaleIntegrator: *“The main drivers are that of the final consumer demand or a trend or a request at the moment or in the future. They often mentioned the importance of having a label or certification that states some differentiation compared to other products in the market. Interestingly, they do not always anticipate existing demand, but also try to predict future demand and see this as an essential part to protect their national quality. This is highlighted by AzolIntegrator: “But now what can save our national meat market, everybody knows that the quality of our meat is very high, but we have to protect it from carcasses who come on the market up to 30 percent less price. To protect it, we do have to make an additional certification”*.

As highlighted, having business continuity and some additional benefit out of the collaboration is key for the farmers. Often this is related to an external driver demanding certain product criteria, which requires them to perform on a certain level. In the case of the farmers, market demand is mainly coming from the food industry (e.g., food processors) and retailers. To comply with the external requirements and ensure product quality (dependent on the business focus the farmer has), they seek to have partnerships that will assure this. The pressure from the industry increases when the ‘reputation’ of the product is higher. In other words, when a farmer produces something with a higher standard or certification, for example, a certain cow breed that produces low fat meat, this increases the pressure to perform on a higher level. This is identified by LinFarm: *“the quality of meat is very important because I sell the product directly to the butcher. The butcher in this region is very important for the sales because in this region the quality of meat is very important”*. Whereas other farmers are more concerned regarding the amount they can produce and deliver to the market.

For the dealers, market demand could also have an influence on partnerships, but to a lesser extent compared to the other groups. The objective of the dealers is to offer a range of products that will support the farmers as completely as possible. Consequently, farmer demand is continuously taken into account, trying to fulfil the wishes of the farmers by offering the product and services they require to do their business. Based on the demand of the customer, the dealers seek to find partnerships that can deliver this. As appointed by FeDealer: *“If we hear that there is really a problem in the market, we go to TN if they have a solution to the problem or if they have ideas about it. Then the ball can start rolling”*. Depending on the in-house expertise and the diversity of products the dealers offer, the demand can vary, thus, influencing what type of partners they need to address that market demand.

Legislative demand

Besides market demand, legislative demand is something that is also taken into account. Although this is something always taken into consideration when doing business, as part of collaborations this concerns not every customer. The feed producers, for instance, see legislation as a very important aspect for new collaborative opportunities, as they often seek to stay ahead of legislation by engaging

with local governments and collaborating with research institutions. Especially in the coming years, collaborative innovation will become more important as they see increasing legislative demand, especially regarding environmental issues. Hence, seeking to find partnerships to address this, both with their supplier and third parties. To make a specific topic a priority they need to identify some demand. As stated by ThomFeed: *“it tends to be either market driven or legislative driven. [...] At the moment locally ammonia emissions from an environmental point of view is a pretty hot topic. [...] So you know those are areas that are potentially legislation could have an impact [...] those things that could potentially be legislated could actually start to restrict the implications on local agriculture”*.

This is similar for the integrators as they try to anticipate future legislation. They do this by constantly improving their product and raising the standards of quality through certification. As the integrators also have control over the farms, they are also much concerned about regulations regarding animal welfare and see this as something that becomes increasingly important and to which they need to anticipate. As stated by AzoIntegrator: *“With the Premba certification, it means that we are drastically going to reduce the number of heads per farm [...] animal welfare is the main topic [...] regulations will become even more strict in the next few years”*. To address this, they seek partnerships where they can get support in accomplishing this through collaboration and collaborative innovation.

For the farmers, legislative demand is not identified as something that features highly in present collaborations and is seen as something to address in the future (sustainability related topics). But, when needed they show interest in addressing external demand in collaboration with their supplier, as stated by LucioFarm: *“I think it is very important to collaborate with TN to achieve the next objective of the new pact regulation, this is key. Because sustainability will be more important depending on the legislation and dependent on the beef buyers”*. Indicating that to start addressing certain issues such as sustainability in collaboration, this depends on external factors and the farmers await the demand coming from the government. They do emphasise that when this is required, they are in favour of doing this as part of collaboration and being involved in collaborative innovation, but the idea of how to deal with certain regulations needs to come from the partner.

Legislative demand is not observed as an external driver for the dealers. The dealers emphasise that it is more about complying to existing regulations, including sustainability related requirements and that it is not something of consideration when partnering up with others.

Summarising, external demand is important to all customer groups and is a key driver for collaboration and in some cases for collaborative innovation. What type of market demand is exactly important for each customer is highly related to the customers they serve. Besides, what market demand is taken into consideration also depends on the type of customer, as it is observed that the dealers and farmers mainly focus on their direct customers, whereas the feed producers and integrators take the whole SC downstream into consideration. This could potentially explain why the latter two also seek collaboration dealing with market demand and already addressing certain issues (e.g., sustainability) to stay ahead of future demand. Regarding legislative demand, this is for all customers a key part and always something they need to comply with, but not always something important for partnerships. Legislation becomes especially important when addressing sustainability topics and is recognised as something that becomes more prevalent in the near future.

4.1.3 Partnership criteria

To address these internal and external motivators for collaborative innovation, certain criteria are of importance when selecting a partner. The partnership criteria identified consist of the following

elements: trust-based, organisational fit, capabilities, and complementary knowledge, and are addressed accordingly.

Trust-based

All customer groups emphasise the importance of having a trust-based relationship with their partners. Without trust, it is more likely that the partnership will not last and that future collaborations are not expected. Hence, for a successful collaborative partnership between supplier and customer trust is essential. The feed producers highlight that to create trust, it often requires a long-established relationship, which takes time and personal connection is key. As stated by RoFeed: *“I do think that the relationships between individuals is key and building that relationship and building that trust, which takes time [...] So a new supplier coming onto the market can't expect to have that same level of trust and collaboration straightaway.”* Besides, in order to have collaborative innovation, the feed producers highlight that the type of relationship becomes even more important, because it requires even more trust and commitment from both parties. Therefore, the customer needs to be confident to share its business and believe in the partner that they will come up with solutions and support after.

Similarly, the integrators also find it important to have a partner that is trustworthy and where they can rely on, as stated by AzolIntegrator: *“We look for a supplier that is reliable, that we can trust on that we have our protocol of analysis”*. This is related to having a partner that keeps delivering a good product ensuring their own product quality and trust that the partner keeps providing good services.

For the farmers a trust-based relationship is extremely important, which is seen as the principal reason for having a good partnership, as stated by SelioFarm: *“It is a trust idea. If TN has good behaviour with me, I have good behaviour with TN. This is the most important idea of collaboration. At the end it is the trust in the people I work together with”*. In this, trust is closely related to the service and product the supplier delivers. As stated by ChelinFarm: *“the motivation for collaboration are two words: service and quality. Trust is important that TN will give good service and solve problems regarding the animals”*.

Overall, the dealers mentioned the importance of having a well-established relationship where trust plays a central role. In this, it is of importance that the supplier is a reliable company that delivers when needed. To accomplish this, it is essential that the partner is well responsive and is able to quickly respond when a product or service is needed.

Organisational fit

Closely related to having a trust-based relationship, an organisational good fit is also identified as a key criterion for a successful partnership. Often this relates to the connection between the representatives and in some cases also about strategies and commitment. For instance, the feed producers mention the importance of having an organisational good fit between both teams, which are able to understand each other and share the same vision towards collaborations. An aligned strategy is especially important when addressing collaborative innovation where a win-win mentality is preferred. This is highlighted by AgriFeed: *“I think it was a good fit in terms of organisational strategy, where we want to be and how they want to be as well. So, it was a good fit between the two companies, I think that was the main driver for this relationship”*.

The integrators also see the collaborations as a win-win type of partnership in which both parties are keen to keep improving. Hence, having an organisational good fit is crucial as to achieve this win-win partnership aligned strategies and commitment from both sides are required, as pointed

out by AzolIntegrator: *“The position is more than a commercial relationship, it is a win-win strategy. [...] all the choices, all the decisions are made together and are driven by aiming to reach the best quality. [...] So both are committed to aim to reach this high standard of quality. So, this is why we don't consider this only a commercial relationship but also a partnership together as a win-win collaboration.* This highlights that both the feed producers and the integrators aim for a win-win partnership instead of a simple relationship in which they keep improving. Thus, being able to innovate they seek partnerships with organisations that fit their ambitions.

For the farmers it is less about win-win relationships but more based on mutual commitment. The farmers experience a lot of work pressure and responsibilities at the farm where unexpected things could happen. Hence, it is very important to have a partner that is well responsive and often visits the farm. To accomplish this, there needs to be a good organisational fit, meaning that there has to be commitment from both sides with easy communication where the supplier is always reachable to provide the service needed. As stated by SelioFarm: *“When we have some problem the company needs to react very very fast [...] the most important thing is the service and how quickly the service is and a good nutrition”.*

For the dealers the meaning of having a good organisational fit is more related to the type of products their supplier can offer and if this fits in their collection. Thus, it is more about a seller-buyer relationship. In this, it is essential that there is a good fit between the representatives. For example, DaDealer mentioned: *“The people are friendly and speak the same language. We have the same product groups, we have the same customer groups and administratively it is also doable. Those are all positive points, they offer A brands, everything fits what they have”.* They emphasise that it is essential to have a personal connection with one of the representatives to whom it is easy and pleasant to reach out to. One dealer even mentioned that the partnership is not with TN, but with the person representing TN and without that personal connection the partnership would not exist: *“The connection with TN is Jacob. So, Jacob is our guy and I really like Jacob and all there is, I discuss it with Jacob. [...] That is really special, because if you look at it, do I have a connection with TN, no I have a connection with Jacob. I would like to buy from TN because Jacob is there”.* This highlights having a good organisational fit (would it be with one person or a whole team) is key.

Capabilities

As already mentioned, often a good partnership is based on the representatives and the teams that need to collaborate with each other. Besides having a good fit and trust-based understanding between the people, it is also essential that the people have certain capabilities and skills. The feed producers for example emphasise that the capability of the people in the supplier organisation is key to establishing a good functioning collaborative relationship. For instance, KerFeed stated: *“if you're dealing with a company, more often than not it is because the person is capable. And, that's a bigger driver for me than anything else”.* In addition, to create a competitive edge and to constantly improve the quality of the product, the feed producers also highlight the importance of having a partner with certain capabilities, including the research facilities, to make it able to deliver the science-based principles behind it. Hence, the level of R&D is key to deliver that science and to be able to work jointly on R&D. As most of the feed producers desire to have collaborative innovation as part of collaboration, the level of research and the scientific bases a partner can provide is of great importance. The integrators share this interest of having a partner that has a high level of R&D and is capable of providing nutritional plans and scientific bases. Besides, they emphasise that when starting a partnership to address certain issues, the type of parties involved is dependent on the expertise and

resources needed. As ScaleIntegrator stated: *“The main drivers to choose the people are due to what was the target, what we want to achieve. [...] due to the scope of the study and due to the reliability of those scientific people on the market we make our choices”*.

As stated previously, the farmers heavily rely on the support of the supplier company. Hence, the capabilities the supplier contains are of great importance, because the capabilities and knowledge the representatives possess influences the level of support, and thus if the best on farm support can be provided. Besides, the farmers emphasize the importance of fast action reaction in this, meaning that the supplier can anticipate quickly to acute needs, as stated by JanFarm: *“If something changes, for instance the goats get diarrhoea or something happens then you need to have someone who can anticipate to that”*.

Compared to the other groups, the dealers have lower requirements toward the capabilities of their supplier. They find it important that the representatives have enough knowledge about the product they sell and when needed can provide solutions to customer problems in which accessibility is key. As stated by FeDealer: *“First of all, accessibility is very important, because if I have a question it often needs to be answered quickly. Besides, the knowledge someone or a company possesses to be able to help me further with problems. Very important of course because we need to explain it to the customer, which asks for a quick response. So, those are two very high priorities for a representative”*.

Complementary knowledge

The last element of partnership criteria is complementary knowledge or support, this is related to having additional support next to the ‘basic’ requirements. The feed producers share the interest (and requirement) to get complementary support regarding specific science-based nutritional solutions (in their own business or towards their clients, on farm consulting) and that it is not only about purchasing products or using some service from the supplier. It concerns the additional technical service of the supplier to support their customers about specific product characteristics and usage. Besides getting additional knowledge support, the feed producers seek to gain additional market knowledge, which is about being kept up to date about the developments and innovations in the industry all over the world. For this, they seek partnerships with international focus and expertise. Especially companies that are located in more isolated countries, which are in terms of industry developments behind other parts of the world, find it beneficial to have partnerships with international-oriented suppliers. In this way, the customers are able to adapt existing solutions (with the help of the supplier) to the local market. This is mainly applicable regarding partnerships including collaborative innovation. For the feed producers, this requirement is essential to start a partnership, for example stated by ThomFeed stated: *“companies like Trouw with a worldwide or a European network have value in terms of, there may be other similar experiences elsewhere and we can call an expertise from other parts of the grip. And we would reformulate something that maybe would work for our local market”*.

The integrators also highlight the appreciation of a partner with international focus and worldwide expertise. Besides, because the main objective of the integrators is to deliver high-quality products, they seek to find partnerships that can offer complementary knowledge through which they can reach the high standards of quality with the scientific proof to back it up. In this way, they can differentiate themselves from competitors. For this, continuous research is of importance to keep improving their business and reaching new objectives regarding delivering a high-quality product. ScaleIntegrator: *“Another aspect to this partnership is continuous research. That means we haven’t already reached the final point. We keep researching and finding new solutions together, to keep improving and keep reaching new targets”*. This shows that for both the feed producers and the

integrator complementary knowledge and support are essential and features very highly in partnerships. Compared to this, the farmers, and especially the dealers, see complementary support less of a requirement.

For the farmers, this is related to the fact that they are already dependent to a large extent on the wide range of expertise and support from their supplier to be able to do their business. However, they do appreciate complementary support when addressing certain issues. For example, regarding collaborative innovation and sustainability, although this is compared to the other customer groups less part of the partnership, the farmers show interest in these issues and are aware that it will become more prevalent in the future. Hence, they desire and need to get support in addressing these issues from their partners as they are not able to initiate it themselves and do not have a clear vision on those topics. In this, they value complementary support in clarification and guidance of what to address in the future, such as management ways, new feeding programs, and specify priorities. This is for example highlighted by Selio: *“Support in driving the business, because I suppose that TN has more vision on the future [...] and can guide me to improve my business [...] by new ways of doing business”*. By doing this, the supplier can take a more consulting role next to providing the day-to-day products and services.

According to the dealers, complementary support is less of a priority. One customer mentioned the appreciation of support in innovation of products (reformulating or adapting products) and in education by training employees in TN’s field of expertise. However, overall it is mainly about providing the basic support needed to serve their customers.

Summarising, overall the partnership criteria are quite similar for the different customer groups. The differences identified are mainly about the specifics that need to be addressed in the collaboration, which are related to the internal and external motivators. For instance, for the farmers it is important that their animals perform well and therefore, besides the product quality, the service is extremely important. Hence, the partnership criteria are always closely related to the level of service the partner can provide. Whereas the feed producer and integrators also look for a partner with a high level of research capabilities and worldwide knowledge for creating an advantage out of the partnership.

In sum, by taking a closer look at how the ‘partnership as usual’ is perceived by the customer groups, it can be observed that on an abstract level the different partners find similar elements important (the elements identified categorised under intrinsic considerations, external drivers and partnership criteria). However, which elements are most important and what these mean practically is all very context dependent. This indicates that how to address certain issues (e.g., innovation generation, sustainability) is very individual dependent. Based on the identified elements important in the present partnerships identified in this section, it can be determined how it is best to anticipate the needs of that specific customer. Therefore, in the next section, a closer look is taken on how these elements can be used to promote a certain issue, in this case sustainability.

4.2 Sustainability as part of partnerships

This section addresses the insights identified in the interviews regarding sustainability and how this is perceived in general and as part of collaboration. The previous section about ‘partnership as usual’ already highlighted the presence of addressing certain issues in current collaborations in several of the customer groups and the potential to address these in the near future. However, to get a better understanding of what is required and what is for sure the potential to address sustainability, this section focuses on the difference in how the customer groups perceive sustainability (e.g., what does

sustainability mean exactly for each partner and what are the motivations). Besides, more light is shed on how this affects the present partnerships in relation to the identified themes in the previous section and what therefore the potential is to ensure certain partnership themes through sustainability and how sustainability can possibly be promoted. From this, a model is created explaining the influence of sustainability on partnerships from a customer perspective point of view.

4.2.1 How do different customers perceive sustainability?

An interesting observation emerged from the findings related to the difference in how sustainability is perceived. Although similar terms are used referring to sustainability and collaboration (e.g., the three pillars of sustainability), often the underlying meaning and topics referred to were different between the partners. Hence, to get a clear understanding of these differences in how sustainability is perceived, each customer group is addressed separately with the main focus on what sustainability means for them and their priorities in addressing sustainability. In Table 2 an overview is provided highlighting the different priorities for sustainability. The differences in sustainability perception towards collaboration is further elaborated on in the next section discussing how sustainability affects present partnerships.

Table 2. Overview of the different customer groups perceive sustainability.

Customer group	Sustainability includes for them	Main priorities
Feed producers	Three pillars of sustainability Economical and environmental sustainability go hand in hand Environmental sustainability: producing products that mitigate effect on environment, manufacturing process Social sustainability: healthy food from farm to fork, origin raw materials	Cost-efficient solutions for their customers Products that decrease environmental impact
Integrators	Production and quality of product Environmental sustainability: carbon footprint of product, greenhouse gas emissions, antibiotic free, use of certification Animal welfare: number of animals per square meter Feed efficiency: reusing waste and reduced energy balance in diets	Antibiotic free, certification for reduces greenhouse gas emissions
Farmers	Economic sustainability most important: decreasing production costs or increase product volume Environmental sustainability: reduction of emissions	Economic sustainability, decrease costs
Dealers	Burden the environment as little as possible Separating waste streams, no additional waste Packaging and lightning In one case: food safety, antibiotic usage, transparency	Packaging and waste streams

Feed producers

In contrast to the other customer groups, the feed producers (and integrators) already mentioned sustainability topics (in some cases without specifically mentioning sustainability) before asking specific questions regarding sustainability. When talking about sustainability, the feed producers often refer to the three dimensions of sustainability, including economic, environmental, and social sustainability. In this it is crucial that commercial (economical) sustainability and environmental sustainability go hand in hand and that cost-effective solutions for their customers are key. Regarding environmental sustainability, the main focus is on mitigating the effect on the environment in which nitrogen, ammonia emissions, phosphorus, carbon footprint, soil usage, and antibiotic usage are topics

that are high on the agenda. In this, they focus on how animal feed can support the animal in the best way while mitigating the effect on the environment. Besides, several customers talked about the manufacturing process referring to CO₂ emission and electricity consumption. Social sustainability refers to providing healthy food from farm to fork, and origin of raw materials. This is seen as something already covered and as a standard requirement. Overall, sustainability is seen as something essential and should be part of doing business. However, in partnership sustainability is often inadvertently part of collaboration. They do highlight the importance of addressing sustainability in the future and that this is the way forward.

Integrators

For the integrators interviewed, sustainability topics are integrated and already part of their association. When talking about production and delivering quality products this includes the sustainability of the product. In this, the main focus is on environmental impact referring to the carbon footprint of a product, in this case the carbon footprint of meat (e.g., beef or chicken). In this the interviewees mainly spoke about greenhouse gas emissions (especially methane), nitrogen usage, and ammonia emissions. Besides, antibiotic usage is seen as an important aspect of sustainability wherein it is key to find natural alternatives to reduce or exclude the use of antibiotics. To assure the quality of their products they often seek to have certification that proves the quality of their product, including produced sustainably (e.g., less greenhouse gas emissions or antibiotic free). Another aspect that is often found important is to address animal welfare, in this case referring to the number of animals per square meter, and the importance of complying to certain regulations to receive a certification or improve the rumen health of the animal by using better quality feed. Furthermore, they see opportunities in reusing waste for animal feed and reduce energy balance in diets in which the aim is to be more efficient on farm level. Thus, a combination of being economically sustainable as a company and environmentally sustainable to assure the preferences of the consumer. Summarising, sustainability for the integrators entails the sustainability of the product they sell in terms of emissions and certification. Next to the environmental sustainability of their products this needs to be balanced by ensuring economic sustainability of the company by creating efficient solutions. To ensure this, the integrators find it of great importance to have continuous research to improve the sustainability of the products and to obtain proof to be able to claim it on the product label visible to the end user. This is especially important to differentiate from competitors and protect their product in the market in which sustainability is seen as the way forward. Hence, they see sustainability as the main topic for future collaborations.

Dealers

Noticeable was that the dealers (together with the farmers) were the only ones who did not mention sustainability topics as part of present collaborations before asking directly about it. Besides, it was observed that the dealers mentioned different types of sustainability aspects and found it less of importance compared to the other groups. The main aspects mentioned are about trying to burden the environment as little as possible by separating waste streams, producing no additional waste, and no environmental pollution (disposing waste the right way). In this, they highlight the use of biodegradable or responsible packaging (no plastics) and LED lighting, but do not show interest in other aspects of sustainability. Besides, if there is a sustainable option that delivers an economic advantage or creates efficiency then they are open to it. One dealer deviates from this by finding additional sustainability aspects of importance, including food safety, delivering a healthy product (e.g., antibiotic

free), and being transparent about the product you offer. The latter dealer finds it therefore of additional value to include sustainability in partnerships, especially focusing on education regarding the product functioning and efficiency. As described in the previous section about partnerships as usual, this can be explained by having additional knowledge regarding product development and in-house knowledge.

Farmers

Next to the dealers, the farmers did not mention sustainability topics by themselves as part of present partnerships but came to the discussion after asking directly about sustainability. The farmers highlighted that sustainability is not a key part of their business and that they see it as something that needs to be addressed in the future. When addressing sustainability, economic sustainability is in most cases identified as most important because the main focus is on staying in business and being profitable. In this, the farmers talk about being economically sustainable in terms of decreasing the production costs or increasing the production volume. Besides, ensuring good quality (e.g., healthy animals) is of great importance to survive as a farmer. Environmental sustainability is identified as a second priority in which reduction of emissions by the animals (e.g., methane and nitrogen through manure) and phosphorus through nutritional solutions are mentioned. The importance of environmental sustainability differs between the farmers interviewed as it depends on the sensitivity to the environment in the area. More specifically, in some regions where the concentration of animals is low the impact on the environment is low and therefore not an issue that needs to be addressed. The main reason to make sustainability a priority is when the farmer observes demand from the consumer or needs to comply with local regulations. In addition, all farmers highlighted the fact that when addressing sustainability, they need support in defining specific priorities.

4.2.2 How does sustainability affect the partnership?

The partnership as usual section described several dimensions, including elements that highlight the difference in perception towards collaboration and collaborative innovation between the customer groups. However, the different dimensions (and other factors) are in relation to one another, thus, influencing one another. Especially regarding sustainability as part of collaborations, this raises some interesting questions. For instance, what is the effect of the different elements (e.g., external demand, seeking competitive advantage, business continuity) on promoting sustainability in SC? What could bring the biggest effect and are there elements that do not have an effect at all? Is there potential for the customers to actually push for sustainability beyond what is required by some external demand? To get a better understanding of these types of questions, a model is created highlighting the relationship between the identified themes and how sustainability affects these, including factors influencing it (see Figure 5). Based on this model, for each customer group it is explained how sustainability can be best promoted.

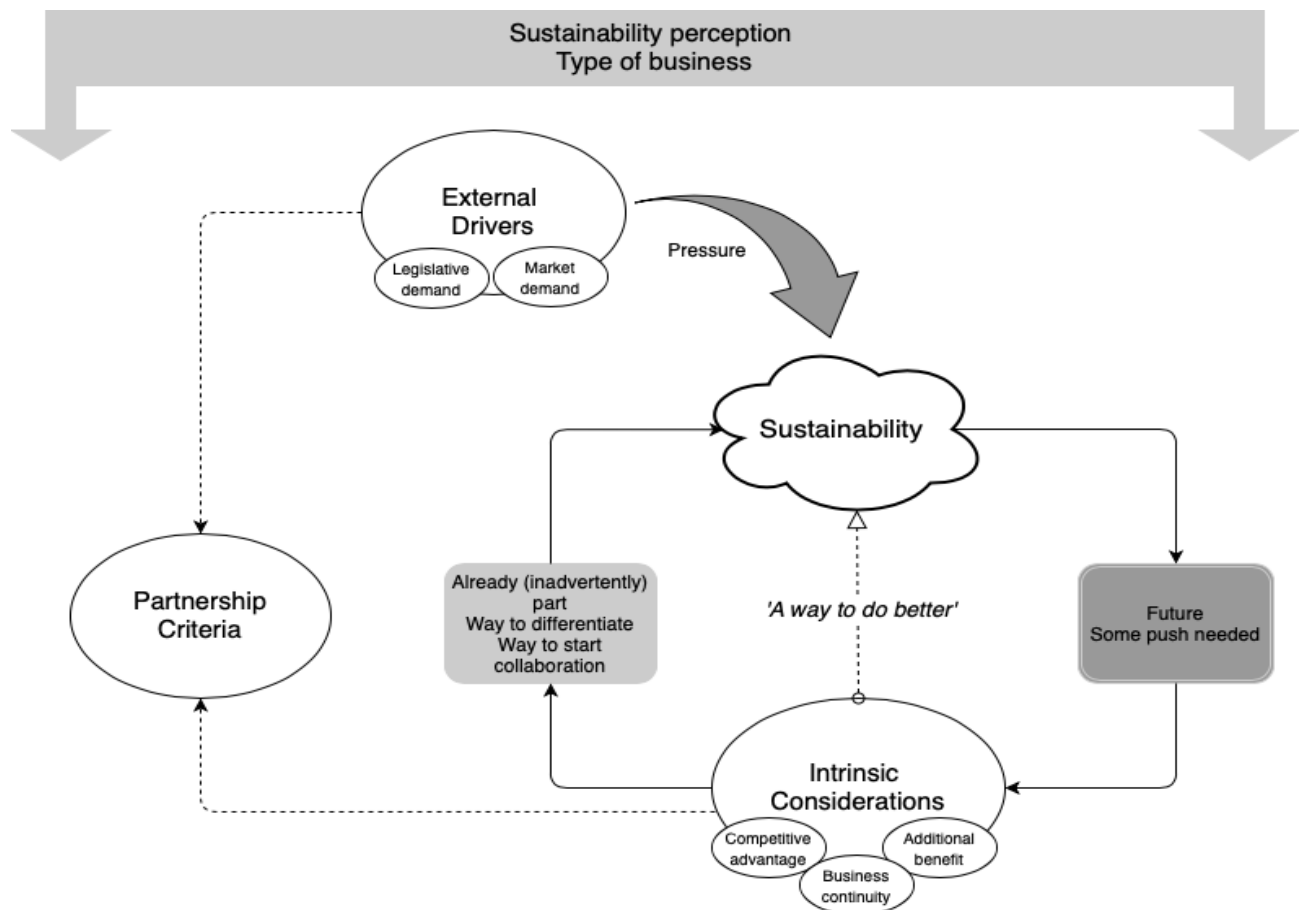


Figure 5. Model describing the effect of sustainability on the present partnership elements.

As highlighted in the previous section, differences in how sustainability is perceived by the customer groups can be found. This suggests that this can influence how sustainability affects partnerships and thus how it affects the effectiveness and direction of collaboration. Something closely related to how the customers perceive something is the type of business they have. Since each customer group has its own focus in the SC with their own expertise and knowledge of a specific area in the agri-food field (e.g., animal feed, animal farming, distribution), this heavily influences how they perceive something, in this case sustainability as part of collaborations. Hence, as visualised in the model, the sustainability perception of the SC partners is overarching (meaning influencing the direction of partnership for sustainability) to how sustainability and the identified themes are affecting each other.

The effect of internal considerations and external drivers on promoting sustainability

By taking a closer look at the effect of the different dimensions (the identified internal considerations and external drivers) on promoting sustainability, several observations in the data are made. First of all, by triggering aspects in their intrinsic consideration, sustainability can be promoted, which is dependent on the type of actor and its business. From the findings, it emerged that all have an intrinsic motivation to do something in a better way, identified as *'a way to do better'*, apart from it being called "sustainable" or not. To do something in a better way is related to improving the existing way of doing business, which can be viewed as doing something in a sustainable way. For example, doing something in a more efficient way, using less resources, or improving the quality of the product considering animal health. However, it seems that the word sustainability is not always received in a positive way (e.g., "a

headache”, “awful lot of work”, “difficult”, “buzzword”), which causes the partners to neglect it or shy away from it and see it as something for the future even though their intention to do something in a better way is indirectly related to sustainability. Keeping aside if using the term sustainability is appropriate and if this will trigger the best practices, for each of the customer groups it differs how sustainability can be best promoted.

When looking at sustainability and the intrinsic considerations of the different customer groups this can be viewed in two ways. On the one hand, in some cases an intrinsic motivation is already identified to address sustainability, and on which can be anticipated to promote sustainability (indicated by the arrow from intrinsic consideration towards sustainability in the model). On the other hand, some ‘sustainability push’ is required, often related to external drivers (indicated by the pressure arrow from external drivers towards sustainability and the arrow from sustainability towards intrinsic considerations in the model).

According to the first way to promote sustainability by anticipating an existing intrinsic motivation towards sustainability, this is especially true for the feed producers and the integrators. For the feed producer this is related to creating an additional benefit in which they seek to find cost-effective solutions for their customers. In this, it is key that economical sustainability and environmental sustainability need to go hand in hand to be able to deliver value to their customer. This is highlighted by ThomFeed: *“any time we talk about sustainability with customers, key to the whole thing is we have to do this, and customers still have to be profitable, still be able to stay in business. So, both environmental and commercial need to go hand in hand. [...] Both aspects have to be taken equally into consideration. If the farmers are not making money, we’re not making money either, so it has to be both commercial and environmental”*. This indicates that when creating the opportunity to provide that additional benefit through cost efficiency this could be a driver to address sustainability intrinsically.

A more predominant factor is gaining a competitive advantage through sustainability. The feed producers see addressing sustainability through collaboration and especially through collaborative innovation a way to differentiate themselves as it is identified as a gap in the market. Highlighted by RoFeed: *“It is a huge opportunity for us to develop new products and bring them to market. I think because it [sustainability] hasn't been to the forefront of our thinking over the past 20 years. I think that gap, that market is going to really open up. [...] It's something I suppose hasn't taken a huge track in the market but again that's probably an area that's worth exploring”*. This highlights the possibility to promote sustainability by emphasising the opportunities to develop new products through collaborative innovation with which they can create a unique selling point in the market.

According to business continuity, this is not identified as the best way to promote sustainability. This is highlighted by the observation made regarding the feed producers since they highlighted that sustainability is in most cases inadvertently part of current collaborations. This is the case as sustainable options often create better performance in the animal feed industry or drive feed efficiency. For instance, to have good animal performance, this is often related to feed efficiency related to healthy rumen of the animal. Besides, in the case of TN and its suppliers, sustainability is already part of the collaborations and research, which indicates that the products and services provided to the customer is to a certain extent already sustainability. This is also identified by BretFeed: *“I know that Trouw further up the line are definitely looking at supply chains and even things like looking at different sources or trace minerals so that we’re not oversupplying things like zinc that are detrimental to the environment. So yeah, I suppose we’re doing it indirectly without realising that as well I’d say”*. This could indicate that innovative and sustainable products could ensure quality, thus,

indirectly important for their business continuity. However, as this is observed as something inadvertently and not necessarily something that needs to be established through collaboration in which the feed producers show intrinsic motivation, promoting sustainability through business continuity for collaboration is not observed as the best way forward.

Similarly to the feed producer, the integrators find it of great importance to gain a competitive advantage and seek to have partnerships where new opportunities are addressed through collaborative innovation, including addressing sustainability topics that become increasingly important in the future. The reason for this is that to protect their products in the market, they need to continuously improve their business, and focusing on new innovations and in this sustainability topics are the way forward. Certification related to sustainability (i.e., reduction of greenhouse gases or antibiotic free) for instance, is seen as a way to differentiate from competitors and to keep a leading position in the market. As stated by AzolIntegrator: *“We have to protect our meat market [...] And if we want to protect our market, we have to add additional information to the label [...] It is the only way to protect our national market”*. Besides, addressing sustainability is recognised as a way to deliver that extra proof that the customer prefers, and it is an opportunity to do a better job as a business. As ScaleIntegrator stated: *“keep trying new ideas in the big word of sustainability that can help us to claim at the end, to claim the meat brand with a sustainability label. [...] A solution that can claim the reduction of methane emissions on the meat label is priceless at the moment, is priceless for our market”*. Thus, the integrators aim to seek collaborative opportunities that can prove the sustainability value of their product by certification. From this it can be suggested that the best way to promote sustainability is by focusing on the differentiation element. According to business continuity and additional benefit, no direct clear evidence was identified highlighting the opportunity to promote sustainability by focusing on these intrinsic elements. Despite the observation that sustainability is seen as something part of their association and that their goal is to become more efficient with higher profitability for the farmers, it is more something that is driven by external demand. Observed in this quote of AzolIntegrator: *“The aim will be to be more efficient [...] in order to have higher profitability for the farmers. [...] For the moment, the market doesn't have any request from the farmer for the moment. But we know for sure that in the future we will need this, we must have this sustainability product from feed to meat in the market”*. From an intrinsic motivation point of view, the integrators are more seeking to find ‘silver bullets’ through which they can differentiate and create a leading position in the market instead of it being essential to stay in business at the moment or to create additional sales.

These findings show that sustainability can be best promoted in collaborations with feed producers and integrators by emphasising the competitive potential, especially through differentiation in which they seek to find innovative opportunities that prove to be sustainable. In the case of the feed producers, there is also a potential to promote sustainability by focusing on an additional benefit, especially when it consists of cost-efficient solutions.

The dealers and the farmer show little interest in addressing sustainability from an intrinsic motivation point of view. Especially the dealers have no interest in addressing sustainability in collaborations as this is not something that is observed as important in business to business relationships, stated by BtDealer: *“Business to business is not talking about sustainability. [...] Towards our customers we use it as a sales pitch [...] but for us it is no priority”*. It is something the dealer decides to do as an individual company but not something in collaboration with others. In this, the main focus is on separate waste and type of packaging. One dealer deviates from this by also appreciation of having sustainable products in terms of having a fair and safe product. As stated by FeDealer: *“If the*

product is produced sustainably, so at least produced safely under strict rules that apply in that case, if it contains exactly what it should contain, those are important values for me. I should have no doubt about my product. [...] Open and transparent is very important". Hence, if in some way through a partnership this can be ensured, this dealer shows interest in addressing sustainability in collaborations. An example through which this can be done is by training or education in which the people working at the dealer get additional background information about the quality and effect of the product to be able to promote the sustainable value of the products to their customers. As stated by FeDealer: *"Last year we organised a training where we took a closer look at our product and to show our people why the product works well, why they are so efficient. [...] So we received training from Trouw about how we can use our products and make sure that our customers experience less problems, more sustainable so to say"*. Therefore, in case of this one dealer, sustainability could be promoted to some extent by focusing on an additional benefit, in this case by highlighting the safety and efficiency of the product through training and marketing.

The farmers also show little intrinsic motivation to address sustainability at the moment but are aware that it will become more prevalent in the future. This is related to the fact that collaborations are mainly about staying in business and performing in the most cost-efficient way. The farmers are in favour of addressing sustainability through collaborations when this will deliver some additional benefit, thus having a main focus on economic sustainability, and see it as a way to start a collaboration. This is highlighted by LinFarm: *"The most important thing in sustainability is economic sustainability because the competition is very hard, the price of meat is not very high, and the profitability is not high. For now, the first step is economic sustainability to keep existing"*. This can indicate that when addressing sustainability can provide an economical benefit, sustainability can be promoted by focusing on creating an additional benefit based on cost-efficiency. However, overall it is not a key part of their business. This can be partly explained by the region where the customer is located. Particularly for environmental sustainability the farmers located in Spain showed less priority to address this because they see their farming practices as not being harmful. MariaFarm stated for example: *"Economic sustainability is most important because the environment is good [...] There are no environmental problems because the cows are good for the countryside. [...] Thanks to the cows the field is maintained in a good condition. They decrease the risk of fire"*. So overall, sustainability is not a key part of their business, but the farmers are willing to take it into consideration when it delivers an economic benefit.

Besides the intrinsic considerations of the different customer groups, external demand is observed as a key pressure to address sustainability, indicated as the second way to promote sustainability. To implement sustainability in collaborations, often this is not (always) triggered by the intrinsic motivation to do better or because sustainability is already a part of their association in general. But it is associated with some external demand where they need to anticipate. In this way, the external demand pushes the actor to work on sustainability in which intrinsic considerations are triggered to comply with external demand while enabling a beneficial effect from it (e.g., consumer demands a product with lower environmental impact thus triggering the actor to accomplish this for business continuity). External demand is observed as key drivers to push sustainability for all customer groups. However, for the dealers, external drivers have little to no effect on promoting sustainability. As highlighted dealers show little interest in sustainability from an intrinsic point of view. In terms of external drivers that can push them, they do not see this as something they need to be concerned about as the current regulations and potential future legislation is not something they fear for or requires changes. Regarding customer demand, they of course will adjust to their needs but currently

see no indication that demand towards sustainability will become prevalent or is something they can address. One dealer showed interest in sustainability, but it was not observed that an external demand can promote sustainability in collaboration. This can possibly be explained because the dealers are mainly reselling products and offer a range of products, which can support their customer in the best way possible. As they are mainly concerned about reselling, new product development or innovative solutions for sustainability is outside their expertise and therefore do not experience demand from their customer to work on that.

Considering the other customer groups, external demand is very important for promoting sustainability. Especially for the farmers, external drivers are key in addressing sustainability, this relates to both market demand and legislative demand. The farmers highlight that it is dependent on the local regulations and coming legislation what sustainability topics need to be addressed in collaborations. As MariaFarm said: *“it depends on the new political regulation. It depends on the new legislation, what to apply and how fast and what type of sustainability we need to address. It is very linked to legislation”*. In addition, the farmers are aware of the increasing demand, both market and legislative, to address sustainability. However, they see it as something that needs to be addressed in the future and experience no pressure at the moment. This is highlighted by LinFarm: *“It is clear that we need to work on sustainability if the consumer demands it and if new regulations say that we need to work on it. For now, sustainability is not key because now the quality of meat and quality of performance is more important, but in the future, it is clear that sustainability could be an objective”*. Indicating that to start addressing certain issues such as collaborative innovation and sustainability in collaboration, this depends on external factors and the farmers await the demand coming from the market and/or legislation. From this, it can be suggested that some external demand is required to push the farmers to implement sustainability.

The feed producers and integrators see external demand also as something to which they need to comply, and which can drive for new innovation projects. As already mentioned in the ‘partnership as usual’ section environmental issues are observed as something that is becoming more prevalent and where potentially legislation could have an impact. This highlights that in the near future this can become a key issue where they do not react. However, according to the feed producers, when asked if these issues are currently under discussion in partnerships this is not the case as there is no clear demand coming from the market nor legislation, as stated by RoFeed: *“Not really to be honest. I think because I would say at the moment there isn’t a strong signal from the end user, so from retailers and from final customers, nor from legislation demanding that farms do produce a carbon footprint [...] and that there are targets to reduce carbon footprint. I think if those targets were set or there was a strong impetus [...] then that would certainly come to the fore. Today we haven’t been getting those signals. So, that hasn’t been a key priority*. This could indicate that by emphasizing the current need to comply with some demand this could promote sustainability in partnerships. On the other side, it is also observed that external demand is something the feed producers want to stay ahead off so they can differentiate themselves and be ahead of competitors, as stated by ThomFeed: *“Likewise, phosphorus emissions, phosphorus pollution those things could potentially be legislated, could actually start restrict the implications on local agriculture. So those would then prompt us to have a think of sound right. How can we be ahead of the potential legislation? How can we come up with something that allows us to be ahead of where potential law may be? Can we get out there and get a market lead and research this well and get good science behind it”*. This could suggest that there is potential to push sustainability beyond what is required by the law or some other external demand. Especially when this can deliver a leading position in the market.

The integrators also highlight the key importance of external demand on addressing sustainability in partnerships. Especially regarding consumer demand, this is something observed in which they try to comply with certification or by providing a label on the product that proves the sustainability of the product. Next to simply complying to consumer demand they also seek opportunities to do something better. An example of this was a project regarding antibiotic free beef, as explained by ScalIntegrator: *“The main drivers are the final consumer demand or request of the moment or the future. The free antibiotic was coming from the consumer, but also, the antibiotic free project, it was an opportunity to do a better job compared to what was already on the market. It was a fake free antibiotic production, because everybody was able to do free antibiotics withdrawing any treatment 120 days before the slaughter. But we tried to challenge a bit the market, trying to create a project, a real free antibiotic project”*. This suggests that consumer demand is of great importance to the integrators, but that there is also a possibility to promote sustainability beyond what is required by the consumer by focusing on doing a better job and in this way be able to differentiate in the market.

In sum this shows that for the feed producers and the integrators there is potential to push sustainability beyond what is required by some external demand. More specifically, focusing on gaining a competitive advantage through differentiation is observed as the best way to promote sustainability for these two customer groups. For the feed producers there is also an opportunity to do this by focusing on an additional benefit, especially concerning a cost-efficient solution for their customers, but to a lower extent than competitive advantage. Regarding the farmers, the focus on an additional benefit will have the biggest effect for promoting sustainability as they seek economic benefits. For all customer groups except the dealers, external drivers are key in promoting sustainability. Particularly, the farmers await some external demand to address sustainability, especially legislative demand is observed as creating a bigger effect for promoting sustainability than focusing on intrinsic motivator. The feed producer and integrators also find external demand of great importance when addressing sustainability but is also seen as something to stay ahead of. Lastly, the dealers show the lowest interest in sustainability and only for one dealer interviewed some potential regarding additional benefit to promote sustainability in the SC is identified.

Partnerships criteria adjusted to internal and external motivations

The partnership criteria for each customer group is based on the internal and external motivations. According to how sustainability for collaboration can be best promoted (which elements) and what this exactly entails, the criteria needed from their partner to accomplish this is related to these specifics. For instance, when a customer seeks to gain a competitive advantage, which can already be an intrinsic motivator or driven by an external demand, it is required from their partner to provide scientific bases and high level of R&D, thus, related to the capabilities element. This indicates that what partnership criteria is key for the customer to address sustainability in collaboration, this is very dependent on the specifics of the project, and thus very context dependent. As the main objective of this section is to explain how sustainability can be best promoted, the relationship between partnership criteria and the intrinsic considerations and external drivers are not further elaborated on.

5 Discussion

In this study, TN and its different customers are researched to get a better understanding of the perceptions of different partners in the SC towards collaborative innovation and sustainability. In this chapter, the findings are discussed. First, the theoretical implications are addressed in which the identified elements found important for collaboration and collaborative innovation in the SC are discussed according to existing literature. Also, this is done for the different perceptions of the customers towards sustainability as part of collaborations. Next to this, practical implications are provided. Finally, the limitations of the research are discussed and suggestions for further research are given.

5.1 Theoretical implications

The findings of this research highlight the perceptions of different types of customers in the agri-food sector in a single context towards current partnerships in the SC with a special focus on collaborative innovation and sustainability. Previous research suggests that the heterogeneity of partners in the SC with varying motivations can cause collaborations to fail (Corsaro & Snehota, 2011). This research highlights which these motivators/elements important for engagement in collaborations actually are. Besides, a closer look is taken on how sustainability can be promoted in partnerships. First, the findings of what the different customer groups' perceptions are towards the present partnership, including collaborative innovation are discussed according to existing literature. Second, the findings of how the different customer groups perceive sustainability and how this affects the present partnership are discussed.

5.1.1 Important elements in the present partnership

Previous research in the SCC and collaborative innovation literature mainly focused on the effect of certain elements on the effectiveness and intensity of collaboration and innovation generation, such as how to apply benefits and structure collaboration (e.g., Barratt, 2004; Cao & Zhang, 2011; Matopoulos et al., 2007). This study aimed to build further on the existing literature by inductively studying the perceptions of partners in the SC in a single context to identify elements found important in present partnerships from a customer point of view. The main findings regarding the present partnerships are that on an abstract level, similar things seem important for the different customer groups, which can be categorised in intrinsic considerations, external drivers, and partnership criteria. Each category including the associated elements identified are discussed with previous research.

The intrinsic considerations and external drivers found in this study, include elements that are essential motivators for the customer groups to start and ensure collaboration. The intrinsic motivators identified in this study consist of the elements: business continuity, additional benefit, and competitive advantage, which are similar to what previous research has found. The first element identified in this study, business continuity, refers to sustaining the current way of doing business in which the supplier simply delivers what needs to be delivered to ensure revenue. This element is in line with previous research that found that collaboration can ensure, amongst other things, market share, return on investment, and certainty of demand, thus, important for ensuring business continuity (Cao & Zhang, 2011; Lewis, 2002). Closely related to business continuity, gaining an additional benefit is also observed as an important intrinsic motivator. Previous research highlights that collaborations, including collaborative innovation, lead to performance benefits, such as cost reductions, increased return on assets, and more efficient operations (Cao & Zhang, 2011; McLaren et al., 2002). This

corresponds with observations made in this study in which the studied customers seek to gain some added benefit out of the partnership, such as additional sales, more savings and increased performance.

The last element determined as an intrinsic motivator is creating a competitive advantage through partnering with others through collaboration and collaborative innovation. Especially regarding collaborative innovation, gaining a competitive advantage was identified as a key motivator for some customer groups, because they see innovation as a way to differentiate themselves from others. The customer groups who considered competitive advantage less important highlighted that innovation generation as part of collaboration does not feature highly as they are more focused on staying in business and focus on more basic improvements. This suggests that competitive advantage is often associated with new product development and innovative opportunities. In other words, it seems that customers who are interested in gaining an advantage or want to differentiate themselves seek that through collaborative innovation with partners in the SC. Previous research also found that SCC can have an enhancing influence on gaining competitive advantage (Chen & Paulray, 2004). More specifically for collaborative innovation, competitive advantage is also seen as a key motivator for engaging partners in the SC as collaborative innovation practices are difficult to imitate (Lee et al., 2012).

Besides, the importance of external drivers in stimulating collaboration and collaborative innovation in the SC are extensively discussed in the literature. Consumer attitudes and strict regulations are seen as a key driver for enhancing the intensity of collaboration in the agri-food sector (Matopoulos et al., 2007). This is also observed in the current study as the customers studied highlight that market demand (e.g., customer or end consumer) or legislative demand can function as a driver to initiate collaborations in the SC. Some customers see innovation generation as the best way forward to comply with these external pressures especially through new product development. The customers studied see the agri-food sector as an ever-changing market in which it is key to partner up with others to keep improving and adapting to external demands.

To address these internal and external motivators, some partnership criteria are identified as key elements when selecting a partner for collaborative innovations (trust-based, organisational fit, capabilities, and complementary knowledge). These findings are in line with elements found in previous research and are therefore briefly discussed one by one. Firstly, previous research identified trust as a critical element affecting the intensity of SCC as it influences the establishment and maintenance of relationships between partners (Fischer, 2013; Matopoulos et al., 2007; Nyaga et al., 2011). This aligns with the findings of this study suggesting that there needs to be a trust-based relationship between customer and supplier, which is established over time to have collaborative innovation.

Secondly, people are identified to be essential for successful collaborative innovation as the capabilities the company and its team possess, results in successful collaborative projects and thus increase the commitment of the partners involved (Fawcett et al., 2008). Similarly, this study found that a first key element to collaborate with a supplier, and especially for collaborative innovation, are the capabilities of the representatives. If the capabilities of the representatives are not proven to be effective, it is more likely that the partnership will end or keep its basic nature (simple seller-buyer relationship). Especially the communication between the representatives of both partners is crucial and is also identified as a key attribute of successful collaboration (Fawcett et al., 2012; Fischer, 2013). Closely aligned with the capabilities of the representatives is having a good organisational fit between the supplier and customer, which was also found as a key element. Previous research found that having

aligned strategies and mutual commitment from both the supplier and customer is essential to establish a successful partnership (Fawcett et al., 2008; Nyaga et al., 2011) indicating the importance of having a good organisational fit between the partners.

The last element identified in this study as part of partnership criteria is complementary knowledge. This relates to the fact that the supplier can provide additional expertise and knowledge that is required to create opportunities in the local market and thus a way to create an additional benefit out of the partnership. In this, worldwide expertise is very much appreciated by the customers as this will give insights into successful innovation elsewhere. Previous research also highlights the key requirement of collaborative partners having complementary capabilities. Especially for innovation and value creation, partners are often chosen based on the complementary capabilities they possess (Fawcett et al., 2012).

Summarising, the elements found in this inductive study as motivators and criteria for collaboration and collaborative innovation are in line with elements identified in previous research where they are seen as elements that can be improved or enhanced by SCC and/or collaboration for innovation. Hence, this research contributes to the existing literature by confirming the importance of these elements for partner engagement in SCC from a customer perspective point of view.

Despite the observation that on an abstract level the different customers share interest in similar elements important for collaboration and collaborative innovation, which are in line with elements found in previous research, this study highlights that on a practical level these are very context dependent, thus, have different meanings for each customer. Especially regarding the elements described for intrinsic considerations, quite some differences between the customer groups are identified. For instance, the farmers and the dealers have a main focus on business continuity in which they seek higher sales through general collaboration. Whereas the integrators and the feed producers have much more focus on gaining a competitive advantage by constantly seeking new opportunities and new ideas with partners in the SC, such as new product development. Besides differences in which element is most predominant for each partner, it is practically very context dependent what it exactly entails for that specific partner. In other words, how this specific motivator needs to be addressed practically and what the priorities are, is very individual and context dependent. In this it also became evident that innovation as part of collaborations differs between the groups and that collaborative innovation is not always a main element of collaboration in general. Possible explanations for this could be that in the agri-food sector many different types of actors or organisations are involved with different expertise and structures (Matopoulos et al., 2007). The complexity of the agri-food sector could indicate the fact that each actor has a different approach and thus different focus on what to accomplish from a partnership in the SC. Previous research also identified that the differences in relationships between organisations affect the ability to collaborate and thus the ability to generate innovations (Soosay et al., 2008). Besides, previous research regarding agri-food SC complexity also highlighted this complexity as it was observed that the different types of product and the structure of the sector can influence the level of collaboration (Matopoulos et al., 2007). The differences in focus and interest amongst SC partners can cause misunderstandings between the partners and makes it difficult to have effective collaboration. This is also highlighted in the literature as a cause for unsuccessful collaboration and collaborative innovation (Corsaro & Snehota, 2011; Simatupang & Sridharan, 2002; Skippari et al., 2017). The observations made in this study highlight that the differences in the meaning of similar concepts can have a big influence on how it will be addressed on a practical level. This study therefore extends the existing literature by providing a unique view on what these differences exactly are between customers towards collaboration and

collaborative innovation and what elements are important to consider. Based on these insights it is suggested that the complexity potentially explains that these differences are something important to consider when collaborating in agri-food SCs. Especially when taking a more holistic approach by involving multiple partners, these differences are essential to understand and to align.

5.1.2 Sustainability as part of collaboration

Besides the insights about what different customers found important in the present collaborations and collaborative innovations, a closer look is taken on how the customers perceive sustainability and how this affects the present partnership. Sustainability can be seen as a current issue in partnerships, which is complicated to address in the SC. Previous research emphasise that tackling sustainability challenges is not something an organisation can do alone and requires partnering up with others in the SC (Gold et al., 2010). Especially, collaboration with customers downstream in the SC is important as they need to accept the final product or service (Seuring & Müller, 2008). Hence, creating alignment with the customer's interests is key to address sustainability and determine how it should be tackled. This research aimed to get a better understanding of the customer's perceptions towards sustainability as part of partnerships by taking a closer look at the identified elements important in the present partnership and how these can be used to promote sustainability in collaborations. Although similar elements are found as drivers for collaboration and collaborative innovation in the literature (described in the previous section), this study shows the additional relevant insight on how these can be used to promote sustainability in collaboration practices with customers in a single context. By studying the interest of different partners in a single context, it made it possible to build comparison between the different perceptions towards sustainability as part of partnerships. By doing this, this research makes a theoretical contribution on how different customers perceive sustainability and how this affects present partnerships.

The first main finding is related to how the different customers in the SC perceive sustainability, especially about its meaning and definition. Between the members quite some differences are found in what sustainability entails for them specifically, but several interviewees also highlighted the confusion around the word sustainability and that this affects the drive to get engaged in the matter. To create partnerships and collaborative innovation for sustainability, it is essential to have alignment around the definition and goal of sustainability. When there is no clear focus on this, members tend to delay or shy away to work on sustainability. Previous research also identified the constraining effect of definitional confusion around sustainability on collaboration in the agri-food SCs (Dania et al., 2018). They highlight that definitions of similar concepts often creates confusion among stakeholders in the agri-food SCs when understanding, evaluating, and improving collaborative behaviour. Creating clarity around the term sustainability is therefore essential to have effective collaboration and collaborative innovation. This study contributes to this knowledge by providing an overview of how different partners in a single context perceive sustainability in the agri-food SC. From this, it became clearer what sustainability aspects are important for different actors in different parts of the chain and, thus, what to focus on when collaborating. Based on these findings further research can focus on how this can exactly be used for sustainable SCC.

Besides, based on how sustainability is perceived by the different customers, it also became clear which motivators matter for promoting sustainability in partnerships, by looking at how sustainability perceptions affect the present partnership. The main findings of this study regarding this objective is that sustainability can be promoted in two ways. The first way, which is applicable to a few customers, is by anticipating on existing intrinsic considerations. More specifically, the feed producers

and integrators show to some extent already interest in addressing sustainability and recognise the relevance to implement this in collaboration. They already realise that sustainability can bring them an additional benefit (e.g., cost-efficient solutions) or a competitive advantage (e.g., differentiate themselves from competitors by offering a product with a sustainability label), thus, suggesting that by anticipating these realisations sustainability can be promoted. This aligns with the existing literature, which identified internal organisational drivers for addressing sustainability in the SC related to the performance of the organisation, such as gaining a competitive advantage or reducing costs (Walker et al., 2008). However, this research found that this is not applicable for each customer and therefore extends the existing literature by providing these differences. A possible reason that this way of promoting sustainability is not applicable for each type of customer can be explained due to the fact that the capabilities and expertise vary regarding sustainability. More specifically, it could be suggested that the feed producers and integrators have more capabilities compared to the farmers and dealers, and because of this they are more driven and capable to work on sustainability topics. This is possibly also related to the observation made in the previous section that the complexity of the agri-food sector with very different actors involved cause differences in focus and thus approach how to deal with certain issues, such as sustainability.

Interestingly, although the customers are aware of increasing importance to address sustainability and being able to feed the future, this study identifies that several partners in the agri-food SC are not predominantly working on sustainability and in some cases awaiting some external demand to push them towards sustainability. Therefore, the second way (applicable to all customer groups) to promote sustainability is by some external push demanding them to work on sustainability, identified as market and/or legislative demand. Previous research also identified that there is increasing pressure on organisations to comply with sustainability requirements (Seuring et al., 2008). Besides, the importance of external pressures to create sustainable change both within organisations and in SC relationships was identified (Saeed & Kersten, 2019). This aligns with the observation made in this research that the customer groups experience increasing pressure to address sustainability with SC partners in the near future. The triggers identified in the literature to address sustainability, include pressures from governments by laws and regulations, and stakeholders such as customers and consumers (Alblas et al., 2014; Beske & Seuring, 2014; Paulray, 2011; Seuring & Müller, 2008). This research identified similar triggers. However, more specifically on how sustainability can be promoted through these elements was not studied. This research extends these insights by more specifically highlighting the differences between the types of customers about how to anticipate the external drivers and which sustainability topics are exactly perceived as essential. In this way, tackling sustainability issues in the SC can be done in a more effective way as it is clear what with whom to address (and whatnot).

Summarising, how the different SC partners perceive sustainability is of great importance when promoting sustainability in the SC. This study made a theoretical contribution by describing how different customers in a single context perceive sustainability and which motivators of current partnerships are key in promoting sustainability in collaboration. Again, based on the findings how the different customers perceive sustainability and how this affects the present partnership is very actor dependent and based on the context. This highlights the importance of clarifying these differences, which to some extent is achieved in this study. However, the inductive findings of this research provide an excellent basis for future research, provided in the next section.

5.2 Limitations and suggestions for further research

This research provided interesting insight by inductively studying the perception of different customers in the SC towards collaboration, including collaborative innovation and sustainability as part of collaboration. Although quality criteria, as described in the methodology, were taken into consideration to increase validity, this research has several limitations, which are discussed in this section. Besides, suggestions for further research are provided.

Firstly, the customers interviewed in this research are part of TN's SC. As highlighted TN is an internationally focused company and therefore the customer interviews originated from different countries in Europe. This could indicate that the level of knowledge and priorities for partnership could be influenced by regional standards, which could be problematic for the comparison made between the different customer groups. The same applies for the type of species the customers are specialised in, which indicates that the customers have a different focus in the SC, also questioning the comparability. A way how this could have been prevented was by studying one specific SC in which the focus is on a certain product or species. However, as the aim of this study was to investigate the different perceptions of different customers of TN, focusing on one product/species or one region would have gained limited insights. Besides, SCs in the agri-food sector are often internationally focused with partners from different regions, thus this could suggest that studying the customer from different regions is a realistic representation of the studied phenomenon.

A second limitation is more specifically for sustainability as part of partnerships. It was identified that the definition or meaning of sustainability varies between the customer groups. In some cases, this was also identified within a customer group indicating that categorisation of the interviewees in the different customer groups was not appropriate when addressing the differences in how sustainability is perceived. In this research, the different topics found important when addressing sustainability by the individual customers were taken together and presented under one group, although these topics were not always mentioned by all interviewees. For the aim of this study to highlight differences between customer groups to determine how sustainability can be promoted, this approach was considered as applicable. However, this suggests that when investigating differences in how sustainability is perceived specifically, it is more appropriate to be studied on an individual level rather than on a group level.

Lastly, this research only focused on the perceptions of TN's customer instead of also addressing the perspective of TN. Initially, the intention was to also include the perceptions of TN towards the studied topics. However, because of the complexity and amount of customer groups studied, this was determined to only use the information obtained from TN to get a better understanding of the customer's perception and not to reflect on TN's side. Including the perception of TN would have been insightful as this provided the other side of the studied phenomenon, namely the partner with which the customers have the partnership with and thus collaborate with. Although this was not included, this study did provide interesting insights regarding different partners in the agri-food SC towards collaboration, including collaborative innovation and sustainability on which further research can elaborate on.

There are also some suggestions for further research. As discussed previously, the findings highlight the observation that on an abstract level the different customers found similar things important (the identified elements) but on a practical level it is very context dependent, because these elements have different meanings to each customer. This suggests the importance of getting a better understanding on how different contexts influence the perception towards collaboration, including addressing certain issues, by focusing on the complexity of the agri-food sector. Further research can

build on this study by taking the context into account. In this, it is important to address the issue of the different actors involved with different expertise and structure. For example, instead of what is done in this study by interviewing each member separately and using those insights to create a comparison, a study can be conducted by taking the members of the same SC in a group study, including other partners in the SC upstream and downstream. In this way, a more holistic approach is taken in a specific context instead of taking an individual approach. This also provides the opportunity to address certain topics, such as sustainability, and create consensus about what sustainability is and how this needs to be addressed taking the interest of all members into account. This could give new insights into the potential to work in a collaborative way on sustainability as effectively as possible.

Besides taking a definitional point of view, it can be interesting to get a better understanding on how it can be determined who does what in the SC from a more practical point of view. Thus, how the different meanings and priorities of sustainability can be converted into practice. To address sustainability in SCC, it is a priority to create consensus about the meaning of sustainability and what it entails. However, to actually implement it in practice, it needs to become clear what the roles and ground rules should be in that collaboration between the involved partners. Hence, further research could focus on determining the existing organisational routines of the partners and how sustainability could be implemented in an effective way. In this manner, it becomes clear what the role of each partner can be in addressing sustainability in the SC.

6 Conclusion

This study aimed to get a better understanding of the perceptions of different customers towards collaboration in the SC, including collaborative innovation and sustainability. This was done by obtaining empirical evidence using the case study of TN and its SC. More specifically, a single case study design was taken using an inductive approach. By conducting 20 interviews with customers from different types of customer groups (feed producers, integrators, farmers, and dealers) answers to the research questions could be provided.

The first research question is: *What are the perceptions of different customers in the supply chain regarding collaborative innovation in the present partnership?*

The findings show that the perceptions of the different customer groups towards the present partnerships are based on three dimensions that are considered as important for collaboration, including collaborative innovation. These dimensions are 1) intrinsic consideration consisting of the elements business continuity, additional benefit and competitive advantage, 2) external drivers, which consist of market and legislative demand, and 3) partnership criteria that include the elements trust-based, organisational fit, capabilities and complementary knowledge. The findings indicate that on an abstract level the different customers find similar elements important to the present partnership. However, more specifically for collaborative innovation, differences in what elements are important occur between the customer groups. Besides, it is observed that the customer groups differ in their opinion on the importance of collaborative innovation.

First, overall the feed producers and the integrators have similar perceptions towards collaborative innovation. They consider collaborative innovation as something already of importance for ensuring business continuity and creating an additional benefit, but especially essential when trying to gain a competitive advantage. Here, external drivers (market and legislative demand) are constantly taken into consideration to give direction. To address collaborative innovation with a partner, the feed producers and the integrators seek partners with high level research capabilities and worldwide expertise that can provide them with the complementary knowledge needed to gain that competitive edge. The main differences between the feed producers and the integrators are related to the specific needs of their customers of what needs to be addressed in collaborative innovation. For instance, the feed producers value opportunities that provide unique solutions to their customers (the farmers), whereas the integrators often mentioned the importance of having a certification or a label on their product to be able to differentiate.

From a farmer perspective, collaborative innovation is not something perceived as crucial for the present partnership and they are currently more interested in general collaborations. However, they do show interest in addressing this in the future but awaits the initiative of their supplier. When including collaborative innovation in collaborations, they find it essential that it will provide some additional benefit regarding the performance of their animals. Besides, external drivers are identified as important for the farmers to which they need to comply. Especially requirements coming from the food industry and retailers are observed as something they constantly take into consideration and in which they prefer support from their supplier. The farmers emphasise that in a partnership, it is important to have a partner that can provide on-farm support, thus, a partner having the capabilities to provide the support they need and with whom they have a good relationship with mutual trust and fast action-reaction.

The dealers show little interest in collaborative innovation because the main focus is on reselling products with some support from their partners. Therefore, the present partnership is considered as a more buyer-seller relationship in which most dealers interviewed show no interest in implementing innovations. One dealer interviewed deviates by showing interest in new ideas and opportunities in which collaborative innovation could be the way to go. In this, it is key that some additional benefit is created or that it helps for business continuity, and that the partner provides complimentary support.

The second research question is: *How is sustainability perceived by different customers and how does this affect the present collaborative partnership in the supply chain?*

The findings show that the different customer groups perceive sustainability in different ways. Based on the three dimensions identified in the present partnership it is observed that sustainability perception can affect (negatively or positively) the feasibility of addressing sustainability in partnerships and it became clear what should be done to promote sustainability. This can be done in two ways, first by anticipating on existing intrinsic considerations towards sustainability, and second by external drivers that are required to stimulate them towards sustainability. First, the feed producers and the integrators show to some extent already an intrinsic interest in sustainability and recognise the relevance to address sustainability in partnerships. For the feed producers, sustainability can provide cost-efficient solutions to their customers, indicating that sustainability can be promoted by creating an additional benefit for the farmer. A more predominant factor for both the feed producers and the integrators is by focusing on gaining a competitive advantage as they seek to find ways to differentiate themselves (e.g., certification, new product development) in which they see sustainability as the way forward. External drivers are also considered as important for addressing sustainability in partnerships and can drive the initiation of new innovative projects.

The farmers recognise the importance of sustainability but perceive it as something that needs to be addressed in the future. They find sustainability as part of collaborations relevant when this will create an additional benefit as they seek economic benefits. However, external demand is especially observed as a key driver to push the farmers to address sustainability as they often await some demand, coming from regulations or customers.

Lastly, the dealers perceive sustainability not as something important and show little interest in addressing this in partnerships. Therefore, in most cases, sustainability does not affect the present partnership with the supplier and hence sustainability will not be promoted in collaboration. One dealer did show interest in sustainability to some extent on which can be anticipated by focusing on providing an additional benefit related to the transparency and safety of the products (e.g., through education).

The findings in this research contribute to gaining insight into what is found important for collaborative innovation, which can be used to create more effective partnerships. Also, useful insights are given in how sustainability can be promoted in SCC. These insights are especially relevant for the agri-food sector. As this sector is challenged in enabling to feed the world in the future in a sustainable way, gaining a better understanding of how issues can be addressed in the SC in an effective way is crucial for this endeavour. Hence, these findings are especially insightful for SC managers in the agri-food sector that want to address collaborative innovation and/or sustainability in collaboration practices. This research already gives an excellent overview in how to promote sustainability in collaboration or in collaborative innovation for certain actors, which can be used in practice. However,

when collaborating with other actors, it is recommended to identify and align the perceptions of the partners involved towards the topics addressed and based on these perceptions further specification on how to address the issue in collaboration can be determined. Especially when addressing sustainability, it is important to get alignment about the meaning and of the wording which is used by the participant and what specifically needs to be addressed. In this way, sustainability issues can be tackled in a more effective way and taking a step in the right way to feed the future.

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9. Appendices

9.1 Appendix A List of interviewees

Name participant	Company name (pseudonyms)	Function participant	Location	Species	Interview duration (minutes)
Farmers:					
Maria	MariaFarm	Owner	Spain	Beef	26
Chelin	LinFarm	Owner	Spain	Beef	29
Lucio	LucioFarm	Owner	Spain	Beef	20
Euselio	SelioFarm	Stable manager	Spain	Beef	23
Alfredo	AlfredFarm	Stable manager	Spain	Beef	15
Luis	LuisFarm	Owner	Spain	Beef	15
Jannette	JanFarm	Owner	The Netherlands	Goat	26
Feed producers:					
Nizar	AgriFeed	VP animal nutrition	United Arab Emirates	Multi species	35
Stephen	KerFeed	Nutritionist and mill manager	Republic of Ireland	Dairy	45
Ronald	RoFeed	Nutritionist	Northern Ireland	Multi species	47
Sam	ThomFeed	Technical director	Northern Ireland	Multi species	49
Wayne	FaneFeed	Sales director	Northern Ireland	Multi species	31
Heather	BretFeed	Nutritionist and sales manager	Ireland	Multi species	30
Albert	ForFeed	Innovation manager and nutritionist poultry	The Netherlands	Multi species	29

Dealers:					
Hendrik	DaDealer	Owner	The Netherlands	Multi species	25
Danny	FeDealer	General director	The Netherlands	Poultry	28
Wim	BtDealer	Owner	The Netherlands	Multi species	28
Integrators:					
Rami	TovIntegrator	CEO	Israel	Poultry	38
Matteo	ScaleIntegrator	Purchase manager and farm manager	Italy	Beef	60
Marco	AzoIntegrator	Member of the board of directors and nutritionist	Italy	Beef	44
Trouw Nutrition:					
Jaco	TN	Species director swine - TN innovation	The Netherlands	-	50
Ruud	TN	Global poultry director - TN innovation	The Netherlands	-	42
Jim	TN	Sales manager - TN Ireland	Ireland	-	50
Luca	TN	Sales manager - TN Italy	Italy	-	45

9.2 Appendix B Interview guide customers

Introduction

Thank you for making the time to do this interview. I am doing this project for my master's thesis as part of the master Sustainable Business and Innovation at Utrecht University. I am looking at the different perceptions and interests of supply chain partners with regard to collaboration in the supply chain and collaborative innovation. Besides, the perspective on sustainability as part of collaborations is researched. This is done by focusing on different customers of Trouw Nutrition.

Before we start, I want to ask you if I can record the interview? The content of this interview will be treated confidentially, and the recording will be deleted after. Besides, do you mind if I use your name and function in the report, or do you want to be anonymized? The last thing I want to mention before we begin is that you can stop the interview at any moment.

Introductory questions

- On LinkedIn I saw that your function at company X is [...], can you tell me more about your function and activities?
- How do you currently collaborate with Trouw Nutrition or other suppliers?
- What is your motivation to collaborate?
- What kinds of further potential would you see for collaboration?

More specific questions

- What do you think about collaborations like collaborative innovation (or co-innovation/co-creation) that includes developing new ideas or solutions together with TN/suppliers?
- What is required to implement collaborative innovation in collaboration practices?

- How does sustainability show in collaboration?
- What kinds of further potential would you see when including sustainability?
- What opportunities do you see addressing sustainability topics through collaborative innovation?

Ending questions

- Is there anything you would like to add that has not been discussed yet?
- Can I contact you if I need more clarification on a specific aspect?