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A Network Perspective on Radical Packaging Innovation within Private Labels in Sweden

by

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Abstract

Title:	A Network Perspective on Radical Packaging Innovation within Private Labels in Sweden
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Authors:	June Bergland, Lucie Secretin
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Keywords:	Private Labels, Packaging Innovation, B2B Relationships, Network
Research Question:	In the context of radical packaging innovation, what do the relationships between private labels, manufacturers and packaging solution providers look like?
Purpose of study:	To examine the dual relationships between PL, M, and PSP and the network in the context of radical packaging to gain insight into PL innovation strategy.
Theoretical perspectives:	Actors-Resources-Activities model, Network perspective
Methodology:	Qualitative analysis through semi-structured interviews of all three actors.
Findings & Conclusion:	Our model provides nuances and more perspectives when analyzing the relationships in a radical packaging innovation network, capturing the broader dynamics of the network as a whole, even taking into consideration aspects of the environment that affects this network. We also add a relationship stage to the ARA model to further complement the description of relationships.

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Glossary

Private Label (PL)	Private labels (PL), also referred to as private brands or store brands, are brands fully owned, controlled, marketed, and sold exclusively by the retailer (Kumar and Steenkamp, 2007; Gielens et al. 2021). Examples of private labels in Sweden include Garant, Änglamark, and ICA basic.
National Brand (NB)	National Brands (NB) are brands that are not owned by retailers, instead they manufacture and market their own products. Examples of national brands in the food sector include CocaCola and Heinz and other brands who are widely known and distributed.
Manufacturer (M)	In the context of private labels, products can be outsourced to manufacturers who either specialize in PL (3PM), or have their own national brand and dedicate part of their production to making private label products for a retailer (NBM).
Innovation in Food Product	*"A food innovation product can be described as either a product not previously manufactured by a company and introduced into its marketplace, or an existing product that is presented in a new form alternatively introduced into a market that the company has not previously explored"* (Fuller, 2004)
Packaging Innovation	Packaging innovation is one type of innovation in food product development (Fuller, 2004). This term encompasses several different aspects, one of them being repackaging an existing product.
Radical Packaging Innovation	Radical packaging innovation represents the most complex level of packaging innovation, as it involves substantial changes to packaging formats, and requires significant technical knowledge (Simms & Trott, 2014). An example is repackaging a product from a glass packaging to a carton box.
Packaging Solution Provider (PSP)	A packaging solution provider is a company who provides packaging for other companies and has technical packaging knowledge.

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1. Introduction

The first chapter of this research begins with an introduction to private labels, their evolution, and an upcoming change in their environment. Then, we present our research problem and purpose, which both relate to radical packaging innovation within private labels. Lastly, we clarify the delimitation and outline the structure of our research.

1.1 Background

Retailers own brands like Garant, Änglamark, and ICA basic, referred to as private labels (PL) or store brands. They are brands fully owned, controlled, marketed, and sold exclusively by the retailer (Kumar and Steenkamp, 2007; Gielens et al. 2021). The retailers make tactical decisions for their private labels, related to branding and advertising, pricing and quality, and product development (Kumar and Steenkamp, 2007, Wu et al., 2021). When it comes to production, they can either manufacture their own products or partner with food manufacturers.

Private labels have been present since the 1970s and have been steadily growing in market share (Kumar and Steenkamp, 2007). In 2025 private labels in Sweden had a market share of 27.1% and in the rest of Europe they represented 38,8% of the market, highlighting their importance in the retail sector (Private Label Manufacturers Association International Council, n.d.).

Private labels started out as low-priced products, while on the contrary, national brands were the ones innovating (Kumar & Steenkamp, 2007). During the twentieth century, the market was dominated by national brands who were investing in marketing and branding to be seen by consumers as *"trustworthy, delivering quality, consistency, and innovation at a fair price"* (Kumar & Steenkamp, 2007). Compared to private labels, these brands are not owned by retailers, instead they manufacture and market their own products. Examples of national brands in the food sector include CocaCola and Heinz and other brands who are widely known and distributed.

Private labels' strategy has evolved considerably over time. While historically, they pursued a low-price strategy where the focus was being the cheapest alternative to national brands (Kumar & Steenkamp, 2007; Gielens et al. 2021). They later moved to an added-value strategy targeting middle income and value-driven consumers by satisfying their needs and value preferences. Private labels thus became more a challenger to national brands (Omta & Fortuin, 2014; Gielens et al. 2021). This is where innovation started to become more present in the private labels' strategy.

More recently, Gielens et al (2021) introduced a future-oriented *"smart-strategy"* encouraging private labels to use their technology and data as a strength and resources and have a stronger desire for innovation rather than relying solely on their value-added strategy. One way of following this strategy is to develop packaging and tailor it to the customer needs of different segments Gielens et al. (2021). Indeed, private labels can innovate through food products and more specifically through packaging development (Fuller, 2004). Packaging innovation can help them differentiate by adding value for the consumer, for instance with an easy opening, and the packaging representing the brand on the shelf (Sarah,1990; Rundh, 2016). Packaging can therefore be seen as an integral part of the marketing mix and not only as a protective agent (Kotler, 1991; Rudh, 2005 cited in Beckeman and Olsson, 2010; Chan et al., 2005).

Besides being a key to success, innovation can be driven by the external environment such as government legislation (Fuller, 2004). We therefore present an upcoming packaging legislation that impacts private labels: The EU legislation on packaging sustainability, called Packaging and Packaging Waste Regulation (PPWR) (European Parliament and of the Council, 2025). The goal of this legislation is to make all packaging recyclable on the EU market by 2030, instead of being burned or dumped. The PPWR wants companies to use recyclable materials, minimize unnecessary packaging, and introduce clearer recycling labels on packaging (European Parliament and of the Council, 2025). It also affects the Extended Producer Responsibility (EPR) fees, which depend on the recyclability of the material: the easier the packaging is to recycle, the lower the EPR fee.

The legislation also increases the responsibility of private-label companies for the packaging they place on the market. Under PPWR, any company selling products under its own brand, is generally considered the responsible economic operator (*"producer"*). That means that responsibility cannot simply be pushed onto suppliers. Private labels then become more accountable for packaging compliance which includes documentation and reporting. As a result, they must pay closer attention to packaging design, material selection, and compliance requirements. If not compliant, they are the ones that risk potential fines.

1.2 Research Problem

Since PL has increased their market size and is a major actor in the retail industry, we argue that it is important to understand how they create value and innovate. The need for private labels to innovate was important before, but as Gielens et al (2021) insists, innovating is now needed for private labels to survive. This aligns with Beckeman and Olsson (2011) who already in the 2010s talked about innovation as a way for private labels to attract customers and differentiate themselves. Despite its importance, especially today, innovation has been given little attention in private label research which instead mostly investigated the areas of consumer behavior and competitive strategies (Wu et al., 2021). Furthermore, the private label literature on packaging innovation is scarce (Jiménez-Guerrero et. al., 2015).

We argue that innovation in PL is important to investigate, furthermore packaging is of importance, since it is a part of the marketing mix. Additionally, packaging innovation should be of interest to private labels since it aligns with the value-added and smart strategy. They still need to compete and must evolve with the customer's needs. As mentioned above, packaging innovation comes with opportunities to answer those needs. Indeed, the opportunity of a successful packaging is recognized by Fuller (2004), as a driving force behind innovation. Moreover, elaborating on Fuller's (2004) argument that legislations drive innovation, the upcoming packaging legislation will most likely drive private labels to prioritizing packaging.

In the food sector, packaging innovation can be done in several different ways, including design (graphics, text & color), material, or format (size & shape) (Rundh, 2016). Two researchers, namely Simms & Trott (2014) have classified packaging innovation in more detail, into three levels. The first level being skin deep, the second level body modifications and the last one being format changes. The first two levels require low technical packaging knowledge, as they encompass slight changes such as adding artwork, or making a bag easier to open (Simms & Trott, 2014). However, the last level (format changes) represents a *"fundamental change"* where the packaging changes format, for instance from a can to a cardboard tube which requires high industrial and technological capabilities (Simms & Trott, 2014, p. 2019). This level has been overlooked as an opportunity to innovate as Simms & Trott, (2014) argue. We therefore suggest that this is of importance to explore such radical packaging changes for private labels.

We argue that format changes require PL to cooperate with both their manufacturers and the source for the innovation, namely packaging solution providers. The involvement with this *"third-party"* in the context of packaging innovation has been underexplored by previous research (Bombaywala & Riandita, 2015). For example, in their private label management framework, Wu et al. (2021) visualize the different actors involved in private labels and their links. However, suppliers of suppliers such as PSP are not represented, suggesting they do not play a central role in the private label literature.

In 2011, Beckeman and Olsson (2011) emphasized the potential closer relationship between private labels and packaging solution providers when it comes to packaging innovation. This was not further investigated in their paper, and we argue that the literature has overlooked this evolution of their relationship. The relevance of Beckeman and Olsson's (2011) research today can be questioned, since much has changed in the private label landscape: the rise of smart packaging strategies, evolving sustainability legislations, and private labels' growing ambition as innovators. These changes imply PL's interest in radical packaging innovation is likely to increase. At the same time, packaging solution providers have recently shown an interest in building a partnership with the private labels, due to the growth of private labels market share and their interest in innovation (Pyzyk, 2025).

1.3 Research Purpose

The purpose of this thesis is to better understand the relationships between PL, PSP and M in the context of radical packaging innovation. To do so, we focus on each relationship that occurs between two actors (M-PL, M-PSP, PL-PSP) and then take a broader view by examining the network as a whole. These two steps will help us answer the following research question:

In the context of radical packaging innovation, what do the relationships between private labels, manufacturers and packaging solution providers look like?

1.4 Delimitations

Our study takes place in the grocery retail industry in Sweden, more specifically we focus on Swedish private labels, where we investigate a network of three main actors involved in radical packaging innovation: PL, M and PSP. They represent a triad which is the smallest form of network. We acknowledge that this network may be more complex and involve other actors such as logistical actors and design agencies, but choose to exclude them as they do not play a main role in the development of the radical packaging innovation. Moreover, we choose to not include end-consumers to keep our focus on B2B relationships

By focusing on radical packaging innovation, we restrict our scope to investigating fundamental packaging changes, which typically require the involvement of packaging companies. We therefore purposely exclude incremental packaging changes related to design, which could be developed by the private label without involving the PSP or change of size which can be done easily by the manufacturer.

1.5 Outline of the Thesis

This thesis is organized into six chapters. Chapter two presents our review of the literature in terms of packaging innovation within private labels, relationships required for radical packaging innovation, and the theoretical perspective that will be used to create our model. Thereafter, Chapter three describes our method and analysis process. Next, we present our analysis and findings in Chapter four. This is followed by Chapter five, where these findings are further discussed and where an updated version of our model is presented. Finally, Chapter six concludes this research and provides a reference for future research.

2. Literature Review

In this section, we cover concepts regarding radical packaging innovation, private label innovation, business-to-business relationships and network view. We also present an overview of the prior knowledge of the relationships between M-PL, M-PSP and PSP-PL as a starting point for our data analysis as illustrated in our model.

2.1. Radical Packaging Innovation within Private Label

The following two sections present the concepts of innovation within the food sector and radical packaging innovation in relation to private labels.

2.1.1 Innovation and Private Label

To understand our innovation context, we first need to understand what innovation is. Innovation is described as *"a product, a process, a service or a new way of doing things"* as long as it is perceived as something new (Kotler; 1991). When it comes to the retail sector, Fuller (2004) states that innovation in food products takes place when a company introduces a product that it has not previously manufactured or presents an existing product in a new form (repackage) or on a new market (they have not been present in). Although it can be of different types, innovation should be something new for the company. Beckeman and Olsson (2011) emphasize that innovation within the food sector should not only benefit the end-consumers but also create value for the whole chain such as manufacturers and private labels.

Furthermore, the process of innovating involves several different steps such as evaluating the idea, testing, implementing and finally making and marketing the product (Fuller, 2004). In this process, the knowledge from different departments is needed such as expertise in marketing, R&D, and finance. This paper will focus on the interactions between actors in the context of innovation, rather than the innovation process in itself.

Innovation has been suggested as part of private label strategy by many authors (Beckeman and Olsson, 2011; Abril and Martos-Partal, 2013; Grewal, 2019; Margulis, 2022). This is specifically reflected in the later phases of private label evolution: value-added and smart strategy (Grewal, 2019: Gielens et al, 2021; Sbonelo Gift Ndlovu, 2024). As Gielens et al (2021) argue, the interest in innovation was already present in the value-added strategy, and became even more essential in the smart strategy. They highlight that this desire to innovate comes from the fact that companies, including retailers *"must keep running and innovating, just to stay in the same place"* (p. 113), which goes in line with Lestari et al. (2020) who recognize innovation as a major driver of business success. Furthermore, Gielens et al (2021) argue that innovation is essential for private labels to survive, considering the constant market changes they face today, and in the future. This supports Fuller's (2004) view that companies' motivation to innovate stems from the reward of profitability and long-term survival of the company.

Besides the opportunity for growth, innovation can also stem from other forces that exist in the marketplace such as changing legislation (Fuller, 2004). What these changes do is that they create a need to comply with legislation, which we argue is the case for the PPWR legislation. Here the companies need to revise the materials being used in a product and consider more recyclable alternatives. Reacting to the environment proactively instead of reactively is essential for competition (Fuller, 2004). Indeed, research shows that having an open mind and innovative outlook has an advantage for competition (Beckeman and Olsson, 2011; Sbonelo Gift Ndlovu, 2024).

2.1.2 Packaging Innovation and Private Label

One type of food product innovation is packaging (Fuller 2004). Besides protecting the food, packaging can also be a value-tool that companies use to catch the attention of the customer and differentiate themselves from competitors (Kotler, 1991; Chan et al., 2005; Rundh, 2016; Grewal, 2019). This makes packaging of importance in terms of innovation. Companies can therefore create different strategies to differentiate the product on the shelf, either by having a cheap packaging, thereby enabling price-differentiation or by having a packaging that stands out from other packages on the shelf (Sarah,1990: Rudh, 2005 cited in Beckeman and Olsson, 2010). Packaging also comes with the possibility to offer differentiation in terms of price by reducing transportation cost (Rudh, 2005 cited in Beckeman and Olsson, 2010).

Considering the important role and potential of packaging, it is nevertheless essential to acknowledge the risks associated with implementing packaging changes. Previous research has shown that packaging plays an important role in influencing consumer decisions in the retail environment (Sarah, 1990; Clement, 2007). This can be extended to Private Labels, who need to take into consideration the risk of sensitive end-consumer, where small modifications can greatly affect the perception in both a positive and negative way (Sarah, 1990; Grewal, 2019).

Packaging innovation has not been a main focus within private label research, as pointed out by Wu et al. (2021) who categorized over 600 studies on private labels into main research areas such as consumer behavior and competitive strategies, which do not include packaging, innovation, or packaging innovation. The scarce research on packaging innovation within private labels has mostly adopted the perspective of value-creation for the consumer (Jiménez-Guerrero et. al., 2015). In their research on eco-packaging as an innovation within private labels, Jiménez-Guerrero et. al. (2015) shows that innovation through the design of sustainable packages allows the Private Label to update their image by adapting to the consumers' needs (Jiménez-Guerrero et. al, 2015).

Other authors that investigated innovation within private labels are Beckeman and Olsson (2011) who studied food innovation from the retailer's perspective. Their results show that retailers view innovation as a way to differentiate their private labels, often via new packaging. Furthermore, they found that private labels see themselves as drivers of innovation and take actions such as going to exhibitions as a way to get new ideas (Beckeman and Olsson, 2011). Although this study highlights the interest PL have in innovation, and packaging innovation, it was written in the 2010s. A lot has happened in PL landscape since then, such as the emergence of the smart strategy (Gielens et al., 2021), and new consumer needs after the pandemic (Imschloss and Schwemmle, 2023) which suggest that retailers today might be even more interested in packaging innovation within their PL.

It is important to recognize that packaging innovation consists of several changes which can be categorized into different levels of innovativeness (Fuller, 2004; Simms & Trott, 2014). Simms & Trott (2014) introduced three categories of packaging changes: skin-deep, body modification, and format change. While skin-deep and body modifications relate to the packaging size, design, and aesthetics, format changes represent a more radical modification. Examples of format changes include changing the product from a can to a pouch (Simms & Trott, 2014). What is special for this third level of packaging innovation is that it needs high technological capabilities which packaging suppliers possess.

The remainder of the study will focus on format changes, also referred to as radical packaging innovation which require additional actors which we go deeper into in the next section.

2.2 Private Label Packaging Innovation as a Network

The following sections start with an introduction of the actors involved in radical packaging innovation within private labels and their relationships. Then, we present how these relationships form a network.

2.2.1 Actors Involved in Private Label Packaging Innovation

When it comes to radical packaging innovation, resources such as technological capabilities, knowledge about packaging, as well as marketing are required (Simms & Trott, 2014). According to the literature, private labels have internal resources (Kumar & Steenkamp, 2007; Grewal, 2019; Gielens et al., 2021) which they can use for packaging innovation. First, they have insights on consumer purchasing data and buying behavior insights needed to identify customer needs (Grewal, 2019; Gielens et al., 2021). They also have different departments that can be involved when it comes to packaging including a marketing team, designers, product or category managers, and buyers (Simm and Trott, 2014). We argue that these resources are useful when changing packaging. As Fuller (2004) points out, major changes in packaging require the education of the consumer. Furthermore, Simms & Trott (2014) emphasized that the amount of packaging knowledge a company has affects the type of innovation that they can do. This means that the more knowledge and resources a PL has the easier it is to implement packaging format changes.

It is important to note that, beyond their internal capabilities, private labels can access additional resources through their relationships with manufacturers. For PL, manufacturers are part of the supply chain and are responsible for transforming food ingredients into finished food products that meet the requirements of other parts of the supply chain, including the PL and end-consumer (Bourlakis and Weightman, 2004; Janvier-James, 2012). In short, manufacturers are responsible for processing and packaging the PL products, as they own the machines for packaging. For example, in the context of PL, manufacturers are usually responsible for transforming food (e.g., milk, tomato sauce), into a final product (e.g., cutting the tomatoes, transforming vegetables into a soup, etc) and putting it into a package. Coming back to packaging innovation, they can help with smaller adjustments such as changing size of the packaging (Simm and Trott, 2014).

These manufacturers buy their machines from packaging solution providers (PSP) such as *Tetra Pak®*, SIG, etc. These multinational companies have knowledge about their own packages and technology (Fuller, 2004; Brody et al., 2008; Bor et al., 2024). They can also provide knowledge about repackaging, even though they do not package products themselves, but sell their machines to manufacturers (Fuller, 2004). Since they have the technological capabilities required for packaging format changes, they will be involved for such projects, as mentioned by Simms & Trott (2014). Additionally, PSP can for example, help support a sustainability initiative by providing their knowledge on sustainable packaging (Bor et al., 2024).

These radical packaging innovation projects will therefore include 3 actors (PL, M, PSP). Having more than one actor involved is typical for innovation as observed by Fuller (2004) and Ford et al. (2011) who highlight that innovation requires coordination between different organizations. Ford et al. (2011) elaborates that in such business-to-business (B2B) relationships, the companies involved each contribute with their skills and resources to the other partner interacting. This means that B2B relationships enable companies to access skills and resources they do not possess themselves. Furthermore, Ford (2003), explains that the investment made into the relations can result in benefits such as increased experience for both parents, reduction in uncertainty, growth of commitment and adaptations. Ford et al. (2011) argues that relationships are "*simply the basis of business, and without them no company can operate*" (Ford et al., 2011, p. 1). A business-to-business view goes hand in hand with Beckeman and Olsson's (2011) perspective that innovation does not happen in isolation, but rather through interactions, relationships, and collaboration between multiple actors.

2.2.2 From B2B Relationships to a Network

One way to look at business relationships is through a network view. A network is defined as *"the result of complex interactions within and between companies in relationships over time"* (Ford et al., 2011, p. 183) and relies on the idea that a company does not exist only in a dual relationship, but rather in combination with other stakeholders (Ford et al., 2011). Since the network has an interactive and responsive character, success is not dependent on only one company but also depends on the efforts and intentions of other companies (Ford et al., 2011).

In the case of radical packaging innovation, the network consists of three actors: the manufacturer (M), the private label owner (PL), and the packaging solution provider (PSP), who all have relationships with each other, as illustrated in Figure 1.

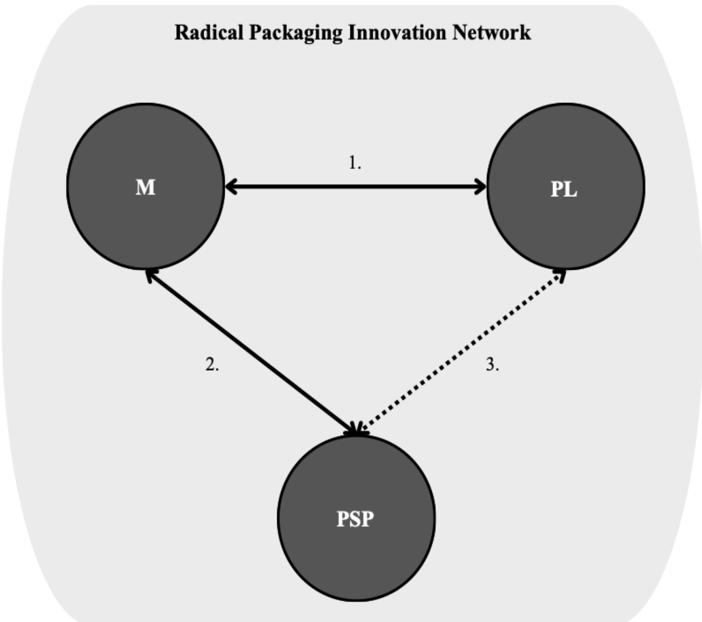

Figure 1: The Radical Packaging Innovation Network

A network that includes three actors is referred to as a triad and is the smallest entity of a network (Ford et al., 2011). Focusing on a network, rather than dual relationships, allows us to collect more holistic knowledge about how PL innovates. Having a network perspective on the supply chain has been done by other researchers (Grunert et al., 1997; Huang et al., 2020). Grunert et al. (1997) mention that the *"innovation process of a company is affected by the way in which the company is embedded in networks, clusters, and chains"* which aligns with our research. Huang et al. (2020) examine the complexity of collaboration in the supply chain network by looking at horizontal and vertical collaborations (e.g., supplier–manufacturer partnering relationships).

Within private label literature, research that adopted a network view is from Wu et al. (2021) who introduced a private label management framework illustrating the actors involved in PL, their links, and the environment affecting them. However, they have not incorporated packaging solution providers, which are an essential part of the radical packaging innovation network, as presented above. Their research does however provide a basis to understand the relationship between M and PL, which is a part of our network.

In the next sections, we will dive deeper into what is known about the relationships of M-PL, M-PSP, and PL-PSP as a starting point for our network.

2.3 PL - M Relationship

Manufacturer and private label relationship has been extensively studied (Hogarth-Scott & Parkinson, 1993; Fearne et al. 2005; Wu et al., 2021). Some authors investigated this relationship from the retailer's point of view by presenting the different sourcing options private labels can choose from (Kumar et al., 2010; Liao et al., 2019; Li and Shi, 2022). Considering that we are investigating the manufacturer as an actor of our network, it is useful to understand the types of manufacturers that collaborate with private labels and will therefore be involved in our studied relationship.

The first option is for private labels to manufacture their products in-house, therefore owning their manufacturing facilities themselves (Liao et al., 2019). The second alternative is for private labels to outsource the production of their products. In that case, they either collaborate with manufacturers that specialize in private label products or with manufacturers that have their own national brand as well (Liao et al., 2019). These are called national brand manufacturers and dedicate part of their production to making private label products for a retailer. It is those third-party and national brand manufacturers that will be in focus in our network, and therefore have B2B relationships with PL. In this relationship, each actor has resources that are beneficial for the other. The manufacturer has the food knowledge and production facility, while the private label has the direct access to the end-consumers, and therefore access to data on their needs and wants (Beckeman & Olsson, 2011; Grewal, 2019).

The relationship between manufacturers and private labels has been extensively examined in terms of power but has received considerably less attention in the innovation context (which includes the radical packaging innovation). However, understanding the relationship from other literature is a good way to summarize the knowledge needed to further explore this relationship in the context of radical packaging innovation. This relationship is often categorized as complex due to the fact that the private label and national brand manufacturer collaborate when NB makes PL products (early in the supply chain) but also compete once in the store (Wu et al., 2021). This is what Bengtsson and Kock (2000, cited in Beckeman et al., 2013) refer to as coopetition. This complexity is further emphasized by researchers who studied the relationship in terms of power distribution (Fernie & Sparks cited in Beckeman 2011; Sutton-Brady et al., 2017). For instance, Sutton-Brady et al. (2017) stated that retailers have the control in the supply chain. Overall, Hogarth-Scott and Parkinson (1993) mentions that this relationship is unbalanced while also being characterized as interdependent. They also highlight that this relationship is likely to change as the network and environment change.

Wu et al. (2021) states that the literature that examined this relationship mainly focused on the competition and power aspect and less on the collaboration. In their study of the partnership between producers and private labels, Beacom and Bergin (2024), highlight the benefits and challenges encountered by each party, which provides a basis to understanding this relationship in the context of radical packaging innovation. Being in a relationship enables them to exchange resources, for instance, PL using the manufacturers' production facilities and M gaining insights into market trends and pricing (Beacom & Bergin, 2024).

As Beacom and Bergin (2024) point out, this relationship brings benefits to both actors involved. For the retailers, the main benefit lies in the potential to differentiate their products. Indeed, outsourcing the production of their PL provides retailers with opportunities to collaborate with producers that are specialized in certain product categories, and therefore are able to produce high quality products (Beacom & Bergin, 2024). For the manufacturer there also exist benefits from the relationship with PL. Producing for private labels is a way to diversify their business and therefore reduce risk by using potential excess production capacities and resources, such as machines and workforce, left after producing their own branded products (Wu et al., 2021; Beacom & Bergin, 2024). Moreover, manufacturers gain financial benefits, which they can use to expand their business by for example investing in equipment or product improvements (Beacom & Bergin, 2024). These financial benefits come from large orders and a guaranteed income provided by PL. Additionally, PL production is a way for M to save money as they require less responsibility than their own production because the transportation, promotion, and branding of PL products is assumed by the retailers.

Both actors also experience challenges when working together. However, since the power relationship is uneven, "*challenges related to these partnerships appeared to be primarily a concern of the producers rather than retailers*." (Beacom & Bergin, 2024, p. 26). The first challenge manufacturers face is related to price negotiation and length of tendering process which lead to uncertainty for the manufacturers since it leads to short-term contracts and therefore insecurity (Beacom & Bergin, 2024). Another challenge for manufacturers is to make adaptations to their product lines, which represents a significant investment. Therefore, large order volumes are necessary to justify the effort.

Considering private labels' innovation-driven strategy, manufacturers are expected to innovate for PL (Beckeman et al., 2013), by developing "*more unique products based on new technologies*" (Beckeman and Olsson, 2011, p. 64). In the context of packaging innovation, it is the manufacturer who needs to invest in new machine equipment if PL wants to innovate, thereby carrying a financial risk (Fuller, 2004). In 2013, Beckeman et al. (2013) suggested that manufacturers do not appear particularly interested in collaboration with PL in terms of innovation. This lack of interest is reflected by other authors who have highlighted several challenges associated with PL-M collaboration in the context of packaging innovation. For example, Simms and Trott's (2014, p. 2021) findings emphasized that marketeers who tried to collaborate with manufacturers were *"frequently "shot down" by manufacturing staff concerned with the potential cost"*. Furthermore, in their study of eco-packaging Jiménez-Guerrero et. al. (2015) also pointed out that developing products resulted in conflict between the manufacturer and retailers because of the balance of strategy and implementation of operational design.

It raises the following question: how does the relationship between private labels and their manufacturer look like today, in the context of radical packaging innovation?

2.4 M - PSP relationship

The next relationship involved in our network is the one between manufacturers and packaging solution providers. Within private label research, this relationship has not been seen as central. This is clearly visible in Wu et al. 's (2021) private label management framework which shows the key stakeholders that have been studied in the private label literature and their links. As noted above, the PSP is not included as a stakeholder, and therefore their link with M is also not present in that framework.

Innovation literature has looked at these actors from two different perspectives. First, packaging solution providers and food manufacturers have been studied separately. In two different studies, Beckeman investigated the role of each actor when it comes to innovation (Beckeman et al., 2010; Beckeman & Olsson, 2013). Secondly, other authors recognized that PSP and M are involved in a buyer-supplier relationship that they described as contractual (Fuller, 2004; Bombaywala & Riandita, 2015). However, they can practice vertical collaboration, as mentioned by Huang et al. (2020). Combining the knowledge from these perspectives allows us to gain an understanding of the relationship between PSP and M.

The packaging solution provider brings resources into this relationship. PSP, have the technology and knowledge about the type of packages they sell to the manufacturer (Fuller, 2004). When put together with other firms' resources, their knowledge can contribute to the development of innovation (Beckeman et al., 2010; Giacomarra et al., 2020). Furthermore, PSP brings ideas and services to manufacturers (Beckeman et al., 2010). According to Brody et al. (2008) and Huang et al. (2020), this allows for the manufacturer to gain a competitive advantage. However, the packaging solution providers are missing knowledge about consumer trends, due to their position as suppliers of manufacturers and therefore far from the end consumers (Beckeman et al., 2010). Manufacturers have some of that knowledge, a resource they can contribute with in this relationship (Beckeman and Olsson, 2013).

According to Bombaywala and Riandita (2015), the relationship can be described as collaborative, since the manufacturer sees their suppliers as an important partner. However, they also note that manufacturers prefer ingredient suppliers over packaging suppliers as the first option is cheaper and requires less investment. Furthermore, Bombaywala and Riandita (2015) states that *"another reason that prevents manufacturers from experimenting with new processing and packaging technologies is skepticism about safety and the perception amongst consumers"*. Even though they want to collaborate, manufacturers' view of packaging solution providers remains to contractual terms.

In 2013, Beckeman and Olsson (2013) pointed out that the manufacturers have an interest in having closer relationships with PSP in terms of collaboration for innovation. This was also mentioned by Huang et al. (2020). Despite suggestions of a potentially growing relationship between PSP and M, prior literature has not studied it extensively. By examining this relationship as part of our radical packaging innovation network, this study aims at bringing further insights.

2.5 PSP - PL relationship

As mentioned above, PSP and PL do not usually interact because PSP is the supplier of M. This explains why PSP and its relationship with PL has not been a focus in the PL literature and therefore is not in the framework presented by Wu et al. (2021). However, there have been many signs that these two actors do want to collaborate, specifically in the context of packaging innovation (Beckeman et al., 2010; Beckeman & Olsson, 2011; Simms & Trott, 2014).

In the traditional supply chain, packaging solution providers inform manufacturers about their offers, who then provide it to their customers like private labels. However, research recommends that PSP should increasingly inform PL about their offers, instead of going through the manufacturer (Beckeman et al., 2010). In turn, PL have expressed their interest in having a stronger relationship with the PSP to support their desire to innovate (Beckeman & Olsson, 2011). Moreover, as mentioned above, private labels think their manufacturers are not so interested in innovation (Beckeman and Olsson, 2011; Simms & Trott, 2014), which further explains the increased need to interact with PSP.

In their study of different types of packaging innovation, Simms and Trott (2014) highlight the factors that prevent companies from developing radical innovations and rather stick to less fundamental ones. Understanding these factors helps us clarify how PL can collaborate effectively with PSP on radical packaging innovation. First, Simms and Trott (2014) emphasize that not having packaging specialists make firms miss opportunities for radical innovation. Consequently, for PL to collaborate with PSP, having a packaging specialist will help with making the communication easier. This is because only interacting with PSP through buyers will lead to cost-related discussions, rather than a focus on radical packaging innovation. This is due to the fact that buyers see small changes such as text changes as *"development"* and overlook radical packaging changes. By contrast, having an internal packaging expert in contact with PSP will help private labels determine the possibilities of radical packaging, since they are well equipped to engage with PSPs at a technical level. In addition to providing the technical capabilities for radical packaging innovation, PSP may also provide PL with assistance in reformulation of a product. In order for the product to have the same taste and quality as before, pointed out by Fuller (2004). This may mean that the packaging solution provider needs facilities to support private labels in such changes.

While Simms and Trott (2014) provide a valuable foundation to help us understand the conditions that enable radical packaging innovation, their study did not focus specifically on private labels. This is also the case for other authors such as Bombaywala and Riandita (2015) who have studied interactions between PSP and other stakeholders of the food industry. However, they pointed out that research including PSP who is on *"the other side"* of the supply-chain is scarce in innovation within food. Studying the radical packaging innovation network will therefore deepen the insights on the potential relationship between PL and PSP.

2.6 Introducing the ARA model

In order to examine the relationships between M, PL and PSP (on a micro-level) a systematic approach was required. We therefore chose the ARA model which breaks down the rather elusive concept of a B2B relationship into three interrelated elements: Actors, Resources and Activities (Håkansson & Snehota, 1995). This model has been used to analyze dual B2B relationships, and it will enable us to examine more closely the individual actors, types of resources and activities involved in the three dual relationships when it comes to radical packaging innovations. We will understand better how they interact for example who talks to who and what they do together.

2.6.1 Actor Bonds

The first element consists of the actor which can be represented by either groups of companies, business departments or individuals (Håkansson & Snehota, 1995). It is the actor who performs activities to maintain, develop or end business relationships with other actors (Håkansson & Snehota, 1995). As both actors invest in the business relationship, showing interest, they form an actor bond. It is important to note that as bonds develop, the knowledge and view that each actor gains from their counterpart develops and forms an understanding of what this other part can and cannot do (Håkansson & Snehota, 1995, p. 1995). Furthermore, as they invest in the relationship they *"become mutually committed"* over time (Håkansson & Snehota, 1995, p. 34). There exist bonds of different strengths, just as there are different strengths in friendships.

An actor bond needs to exist in order for the company to share resources and develop activities towards their counterpart in the relationship (Håkansson & Snehota, 1995).

2.6.2 Resources Ties

The second element of the ARA model consists of resource ties. Each company possesses a unique set of tangible resources such as manpower and technical facilities, as well as intangible resources such as know-how and a customer base. In a relationship, *"two companies direct and orient some of their resources towards each other."* (Håkansson & Snehota, 1995, p. 136). In other words, companies start shaping and adjusting their resources in response to each other. The stronger the investment a company makes in tailoring resources to accommodate a partner, the stronger the resource tie becomes (Håkansson & Snehota, 1995).

Each company then provides the other with access to their resources, meaning that there is a provider and a user (Håkansson & Snehota, 1995). What a relationship does is it affects how resources are provided and used; closer relationships can mean access to more resources. By learning about the other part, the resources can be used more efficiently as resource ties *"reflect the knowledge and skill in the use and production of resources"* and the resource ties can always be used more effectively (Håkansson & Snehota, 1995, p. 137).

2.6.3 Activity Links

The third and final element of the ARA model is activity links. They emerge when a company's activities become connected to the activities by a partner company. For instance it can be about connecting activities such as manufacturing, logistical activities, administrative activities. As Håkansson and Snehota (1995) explains:

> *"Developing activity links in a relationship means that activities performed by a company become connected to the activities of others. "* (Håkansson & Snehota, 1995, p. 56)

Stronger activity links depend on how important the activity is perceived by others and therefore develop when *"the activity of the counterpart becomes visible and understandable"* (Håkansson & Snehota, 1995, p. 56). This typically happens when the counterpart is seen as important in terms of uniqueness or important to *"achieve a desired outcome"* (Håkansson & Snehota, 1995, p. 127).

2.6.4 Interrelation of the three elements:

These elements are interrelated, meaning that they affect each other. For instance, resource ties cannot be created alone; an actor bond is also necessary. Moreover, these elements can be combined in different ways, forming different types of B2B relationships with their own unique structure. For example, a relationship can have strong actor bonds and activity links, but weak resource ties, creating a unique relationship structure. Furthermore, these links, ties and bonds can change over time; strengthening, deteriorating, or terminating as a result of the maintenance of the relationship.

While the ARA model is primarily used for analyzing dual B2B relationships, it also acknowledges that relationships do not happen in isolation which Escher and Brzustewicz (2020) pointed out. For example, the activities performed between two companies are part of a bigger activity chain that spans across multiple companies (Håkansson & Snehota, 1995, p. 62.). This means that changes in the larger chain, impacts the perception of how useful the activities are for the companies and that these activities in turn affect the larger chain. Therefore, we argue that this model provides a starting point in examining our three-actor network as a whole, as it allows us to deepen our understanding of the dual relationships involved.

2.7 Chapter Summary and Our Model before Analysis

Throughout our literature review, we explored radical packaging innovation within private labels, the actors involved, and what prior literature has established about their respective relationships. We also introduced the ARA model which will help us in investigating each of these relationships further in terms of Actors, Relationships, and Activities.

In the remainder of the paper, we will examine these dual relationships and the broader perspective of our radical packaging innovation network. Moreover, we will investigate the upcoming packaging legislation as it is part of the environment affecting our network. Together, these different parts form our model illustrated in Figure 2 below.

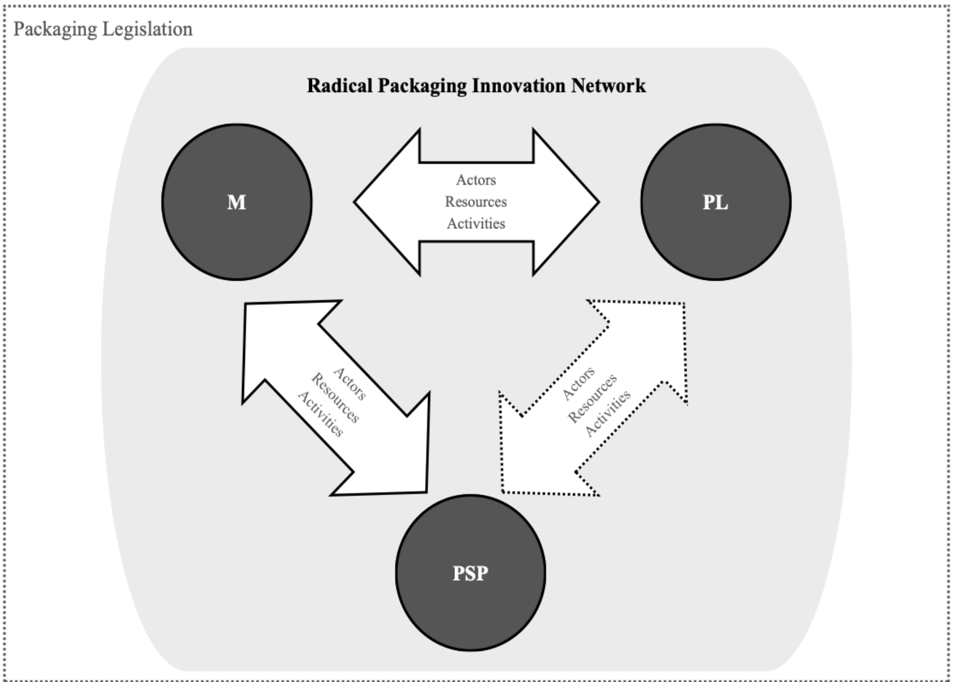

Figure 2: Our Model before Analysis

The model presents the three actors (M, PL, and PSP) and their relationships, illustrated by arrows filled with the elements of actors-bonds, resource-ties, and activity-links. Note that the relationship between PL and PSP is illustrated with a dotted arrow, reflecting the uncertainty around its existence and strength. Together these three actors form our radical packaging innovation network, presented in Figure 1. The packaging legislation is illustrated outside of the network since it may impact it as a whole. A revised version of this model will be presented in the discussion.

3. Method

This section outlines the methodology and explains our decision-making process. It consists of reflection from the process before the interviews to the analysis of the material and ethical reflections such as storage of data.

3.1 Methodological Background

3.2.1 Qualitative method

A qualitative methodology is employed in this study. Qualitative research *"emphasizes words rather than numbers in the election and analysis of data"* (Bells et al. 2022, p. 361.). This implies that the study is concerned with interpretations and reflections of the participants (Bells et al. 2022). This goes in line with our aim to explore the perspectives and experiences of the actors to understand their relationships in the context of packaging innovation within private labels.

We adopted an abductive method, which Bells et al. (2022) define as an *"iterative process between theory and data"* (p. 586), enabling the researcher to continuously compare the empirical data with existing theories. Typically, abduction begins with a phenomenon perceived as *"a puzzle or surprise"* that cannot be fully explained by current theory. The researcher then seeks to explain it by combining existing explanations with their own interpretation (Bell et al., 2022; p. 25). In line with Bell et al. 's (2022) definition, an abductive approach was considered the most appropriate for this research, as it explores the relationships between private labels and other actors in the context of packaging innovation, while also examining whether existing B2B theories can help explain these relationships. Our objective was not only to apply existing theoretical frameworks and knowledge, but to nuance and expand existing literature. We wanted to contribute to existing literature on PL with aspects that are underexplored. More specifically, we moved iteratively between the literature on private labels and business-to-business relationships and our interview data. This iterative process enabled us to draw on our theoretical knowledge while identifying other themes emerging from the participants' experiences. This resulted in gaining insights which may not have been anticipated in the beginning of the study. This benefit of a qualitative method has been mentioned by Easterby-Smith et al. (2021) who stated that there exists a *"degree of* *flexibility and creativity"* which allows for unexpected interactions in the interviews and leave room for interpretations in the analysis.

3.2.2 Data collection

The data collection we have chosen is interviews. More specifically, individual interviews. This decision was due to the complexity of the studied phenomenon since our research consists of examining relationships involving different actors in a radical innovation context. Interviews allow us to better capture complexity and "*enable researchers to access information in context, and to learn about phenomena that are otherwise difficult or impossible to observe*" (Easterby-Smith et al., 2021, p. 195.).

The reason for conducting individual interviews, instead of a group interview or focus group, is that the participants might have felt uncomfortable or discouraged to be open in the presence of each other (Bell et al., 2022), as they are involved in supplier-customer relationships. It would also be very difficult to coordinate a focus group, considering the actors.

The interviews were designed as semi-structured, meaning that we had a predefined topic guide that allowed for consistent key topics (Easterby-Smith et al., 2021). It also allows for flexibility during the interview in terms of the question order and the possibility for posing additional questions, not included in the interview guide (Easterby-Smith et al., 2021). This flexibility allowed us to capture the individual thoughts and go deeper into the topics in which the participant possessed particular knowledge or insight. At the same time the topic guide helped in creating a more coherent dataset (Easterby-Smith et al., 2021).

3.2. Research setting

Given that the research explores Tetra Recart® as one specific packaging innovation, it is presented here, along with our reasoning behind this choice. Additionally, since the study focuses on the relational aspects and innovation dynamics between manufacturers, private labels, and packaging solution providers, it was necessary to contact and interview actors across these categories. Here we present each actor more in-depth and their relevance for our research.

3.2.1 Tetra Recart® as a Package

Our research focuses on radical packaging innovation (also referred to as format change), which encompasses changing the product from a glass jar to a carton tube and other fundamental changes. Given the breadth of this concept and following Ritala et al. 's (2020) recognition that innovation is an elusive phenomenon that is difficult to measure. It is therefore more appropriate to narrow the focus to a particular innovation.

We focus on Tetra Recart®, a specific empirical case, as it exemplifies a radical packaging innovation well: changing a product from a tin can to a paper-based packaging. Additionally, it is widely known in Sweden which makes Tetra Recart® particularly suited for our focus on the Swedish market. This is because the package is already adopted by many Swedish private labels. Therefore, private labels and their manufacturers are likely to be familiar with the package as well as its benefits and downfalls. Asking interviewees directly about radical packaging innovation as a general concept would likely have caused confusion and inconsistent interpretations across interviewees. Using one example of the radical packaging innovation helped us develop a common definition of the term, as recommended by Easterby-Smith et al. (2021). Additionally, having a specific empirical case also allowed us to examine a specific network in the context of radical packaging innovation. Lastly, the relationships between the three actors in focus are likely to be ongoing or established, which may not be the case in other markets where the package is not very common yet.

Tetra Recart® is a package that can be used for different types of food products including tomato preparations, beans, ready meals and sauces, soups, and pet food (Tetrapak, 2020). Tetra Recart® comes in multiple sizes from 100ml to 500ml (see Figure 3) and is made of multiple layers of different materials: paperboard (71%), polymers (24%), and aluminum foil (5%). These layers protect the food from oxygen and light, and increase the shelf-life of the product while maintaining the strength of the package (Tetrapak, 2020).

An important benefit of the Tetra Recart® is that you can sterilize the product and the package in a process called retort, where both the packaging and the food are exposed to high pressure and temperature. Traditionally this process has been done with metal cans and glass jars but Tetra Recart® is built up of layers that allows for having mostly paper-based packaging. As mentioned on the Tetra Pak® website this is *"all thanks to the design and formulation"* (Tetrapak, 2020).

This packaging has benefits for the producer and retailer. First, Tetra Recart® is lighter and more compact than cans, meaning that more packages fit on a pallet and on the shelf (up to 40% more), reducing delivery cost and replenishment time. Additionally, the shape of the packaging allows design itself to always face the consumer and create a coherent effect on the shelf (Tetrapak, 2020), which is not the case for tin cans. For the consumer the benefits of the function and design includes: easy to open, re-closable and easy to store at home.

Figure 3: Tetra Recart® products in different sizes (Tetrapak, 2020)

3.2.2 Tetra Pak®

Tetra Pak® is a global packaging company specialized in food packaging. The company was founded in Lund in 1951 (Tetrapak, n.d.b). It is present in 160+ countries and counts a total of over 24,000 employees (Tetrapak, n.d.b). Tetra Pak®, as a packaging solution provider is a B2B company that interacts with food manufacturers and brands.

They provide these customers with packaging solutions and have a portfolio of different types of packages: aseptic, chilled for liquid food, and packages such as Tetra Recart® for canned food products. They sell the equipment and machines for packaging and processing, as well as provide services including installation, maintenance, spare parts, etc. Tetra Pak® also owns innovation facilities such as a customer innovation center, a product development center, and a New Food technology development center.

When it comes to the Tetra Recart® package, there is a dedicated department that, together with the customer, reformulates the product to have the same or higher standards as before just in a different package (Tetrapak, n.d.a). Once the customer is convinced, they approve the technology and buy the production line for their production factory. At Tetra Recart®, there exist different teams such as business development (which has contact with customers), food development, as well as product management, services, and marketing.

Since this study focuses on Tetra Recart® as an innovation, interviewing employees from Tetra Pak® and their Tetra Recart® department, allowed us to learn more about the Tetra Recart® as a package, its value proposition, and characteristics. Additionally, this further enabled us to understand the types of interactions that occur within the relationships between manufacturers and packaging solution providers, from Tetra Pak® 's perspective. Lastly, we were also able to gather insights on how Tetra Pak® interacts with retailers and private labels, to assess whether they have a relationship.

3.2.3 Private Labels

The second actor we interviewed was two different private labels in Sweden (who were anonymous). By interviewing packaging specialists within these companies, we aimed to understand their view of packaging and packaging innovation within private labels. Secondly, we were interested in how they described their relationships with manufacturers, as their suppliers, and what type of interactions they usually have when it comes to packaging. Therefore, we hoped to gain insights that would expand, or contrast with the M-PL relationship insights we gathered from the existing literature. Lastly, we also hoped to understand better the interactions that occur between retailers, more specifically private labels, and packaging companies such as Tetra Pak®. This is particularly relevant considering that these interactions, and potential relationships, seem to be quite new as stated in our literature review.

3.2.4 Manufacturers

Finally, we aimed at interviewing manufacturers in order to explore their role as both the packaging solution provider's customer and the private label's supplier. Ideally, we aimed to interview multiple suppliers of Swedish private labels producing food products in Tetra Recart® packaging. However, reaching out to such suppliers proved more challenging than anticipated, likely due to two main factors. First, these suppliers may have limited interest in contributing to this study, as they are not involved in the emerging relationship between PL and PSP. Second, such relationships may in fact be perceived as a threat to their role as the middleman, providing little incentive for participation. Ultimately, we were able to conduct one manufacturer interview with a producer of Swedish private label products. While the company does not operate a Tetra Recart® packaging line, they do operate one from another packaging solution provider offering a comparable paper-based format.

3.3 Sampling and Interview Format

This section describes the selected sampling strategy and interview format. It also presents an overview of the practicalities of each interview, including details about our participants and their roles to clarify the relevance of their knowledge to the study.

3.2.1 Sampling

The selection of participants was guided by the context and purpose of our study. This meant that we needed to collect data from three different actors, namely: Packaging solution Providers, Private Labels and Manufacturers.

The data collection started with getting access to one of the actors: Tetra Pak®, as our PSP. From there this contact person helped us reach and contact other employees at the company. This can therefore be categorized as convenience sampling, since our initial contact provided access for us (Bell et al, 2022). It can also be categorized as a form of purposive sampling since we had to provide a general description of who we wanted to talk to and why (Bell et al, 2022). We discussed what contributions and knowledge we hoped to gain during our interviews and then targeted specific positions which would have relevant experience and knowledge (Bell et al, 2022). Because we had a contact person who helped us with the contacts to other interviewees and reflected on who met our criteria of knowledge, we used a combination of convenience and purposive sampling methods.

For the next actor, the Private Label, the sampling strategy was mostly the same. However, after two initial interviews, our participants referred us to their colleagues which they thought were relevant to our research since they could provide us with complementary insights and thus provided their contact details. This can be categorized as a snowball sampling or *"chain-referral sampling"* because existing participants refer researchers to additional relevant respondents (Bell et al, 2022).

Lastly, arranging an interview with manufacturers was difficult. Finding relevant manufacturers required information from either of the two other actors, since these manufacturers ideally needed to manufacture products for Swedish private labels and have a packaging line of Tetra Recart®. This made us reliant on the cooperation of our interviewees, and their ability to convince relevant manufacturers to contribute to our research, which represents a form of snowball sampling. After many attempts, we received a contact at a manufacturing firm from one of our interviewees within PL. As mentioned above, the supplier did not fully satisfy our ideal selection criteria, as it does not operate a packaging line of Tetra Recart®. Nevertheless, given their experience with a similar packaging format and their collaboration with another packaging solution provider, we considered this participant sufficiently knowledgeable to be part of our study. Implications for our findings are discussed in Section 3.5.

The purpose of the sampling is to generate enough data, so that there is a saturation and possibility of synthesizing the material (Bell et al, 2022). For qualitative research, this is not achieved with a pre-decided number of interviews, but rather when no new insights or relevant data emerge from the interviews (Bell et al, 2022). In the cases of Private Label and Packaging Solution Provider, saturation was reached after multiple interviews. However, that is not the case for the manufacturers, since we only conducted a single interview. This is due to the difficulty of getting access to this actor, as mentioned above.

3.2.2 Participant Background

We conducted a total of 10 interviews: five within the packaging solution provider, four within Swedish private labels, and one with a manufacturer. All interviews were conducted within 27 to 52 minutes. Although some interviewees were based in Sweden, we conducted all our interviews online for consistency. Table 1 provides an overview of the participant information as well as the length of each interview.

Our participants were anonymous for ethical reasons. Their titles were, however, kept as they are a key element of sample selection criteria presented above. It also allows the reader to know their background and therefore better understand their perspectives. Tetra Pak®, the packaging solution provider in focus for this research, was not anonymized. However, the private labels and manufacturer were anonymized, as this study treats them as representatives of broader actor categories, rather than as specific companies.

Within Tetra Pak®, some of our participants were part of Tetra Recart® as a department, while others working for Tetra Pak® had a more global view of the company, as they work with the entire packaging portfolio. Our interviewees also worked with different markets or regions: Sweden, Nordics, or Europe. Their roles also differed in terms of specialization, as some were in sales, others were managers. This also meant that some were more knowledgeable about retailers or private labels, while others had direct interactions with manufacturers. Lastly, it is important to note that all our interviewees within Tetra Pak® had been working there for several years.

When it comes to Private Labels, we have interviewed employees of two major Swedish retailers that have several private labels tiers each. Our interviewees were all working within a packaging department: as packaging specialists or designers. Most of them had been in their position for several years.

Lastly, when it comes to our manufacturer interview, we talked to their head of sales since that is the contact we received. The participant has frequent contacts with private labels in Sweden and is knowledgeable about their company's packaging lines and interactions with PSP, both of which are relevant for our study.

Interviewee	Actor / company	Role	Interview length
Interviewee A	Packaging Solution Provider (TetraRecart department)	Global Director	36 min
Interviewee B	Packaging Solution Provider (TetraRecart department)	Manager (European market)	44 min
Interviewee C	Packaging Solution Provider (TetraRecart department)	Private Label Contact (European market)	40 min
Interviewee D	Packaging Solution Provider (TetraRecart department)	Business Development Manager (Nordic market)	32 min
Interviewee E	Packaging Solution Provider (Tetra Pak)	Retail Marketing Manager	52 min
Interviewee F	Private Label 1	Packaging Developer	49 min
Interviewee G	Private Label 1	Packaging Developer	27 min
Interviewee H	Private Label 2	Packaging Design	44 min
Interviewee I	Private Label 2	Packaging Specialist	50 min
Interviewee J	PL Manufacturer	Head of Sales	36 min

Table 1: Interviewee Presentation

3.2.3 Interview Format

Our interviews took place online via video calls using Microsoft Teams. We chose this form of mediated interview over face-to-face interviewing for multiple reasons. First, as that participants were located in different parts of Sweden as well as in other European countries, reaching them in person would have involved significant planning and costs. We therefore scheduled all our interviews online to maintain a coherent format across all participants. Furthermore, conducting the interviews online allowed for a greater flexibility in terms of available dates and time. The interviews were designed to last between 30 and 45 minutes. We chose this duration to ensure sufficient time to collect meaningful insights from each participant, while remaining considerate of the interviewees' limited availability. In summary, mediated interviews via video calls were most appropriate, given to the interviewee's geographical spread and limited availability (Bell et al., 2022).

Online interviews are a type of synchronous data collection which *"resembles face-to-face interviews in the sense that interviewer and respondent converse at the same time"* (Easterby-Smith et al., 2021). Although mediated interviews may not capture all contextual cues and non-verbal communication (Easterby-Smith et al., 2021), we argue that conducting our interviews with cameras provided sufficient visual contact with the participants for us to notice their body-language, which would not have been possible via phone calls.

The interviews were all conducted in English, which allowed both researchers to ask questions and understand the respondent's answers. This made it easier for us to conduct the interviews as well as to interpret the data together (Bell et al., 2022). Additionally, conducting the interviews in English allowed us to avoid the additional step of translation, which is time-consuming and may lead to misunderstandings or information loss during translation, as highlighted by Bell et al. (2022).

3.3 Interview Process

The following sections present our interview process, starting with the preparation before conducting the interviews. Then, it describes how the interviews were conducted. Finally, it clarifies how we handled the data in an ethical manner.

3.3.1 Interview Preparation

We began our preparation for our interviews by conducting literature research, following an abductive method (Bell et al., 2022). From there we identified key themes and concepts related to our research question and formed interview questions. Considering that we were interviewing three different types of actors: a packaging company, two Swedish private labels, and one manufacturer, we created three separate interview guides, each adapted to reflect the point of view and expertise of each actor type (see Appendix 1).

Our first guide was tailored for the packaging company. The questions revolved around the interviewee's role within the organization, their experience working with the Swedish market (compared to others), the type of customers (manufacturers) they have contact with in Sweden and their relationship with them, their view of private labels in Sweden and their interactions and more generally how they see themselves within the private label network. The second interview guide we created was adapted to the private labels and focused on the following themes: the structure of the organization and the different private label tiers, the decision-making process within private labels, their view of innovation within private labels, more specifically packaging innovation, their relationships with manufacturers, and finally how they interact, if at all, with packaging companies. The third guide, designed for our manufacturer interview followed a similar structure as adobe with adapted questions (See Appendix 1).

One example of a question we asked our interviewees was *"Who exactly do you have contacts with, within PSP/PL/M?"* With this question, we aimed at understanding which specific department or position they interact with, within PSP/PL/M in order to identify the actors for the ARA model. Appendix 2 presents additional examples of questions that capture resources and activities, innovation, etc.

During each interview, we used the appropriate interview guide to help us cover all the different aspects within the research. The interview guides consisted of open-ended questions which allowed for the participants to formulate their own independent thoughts, following an interpretative approach (Bell et al., 2022). When preparing the questions, we avoided using abstract theoretical concepts, so that our questions were clear and easy to understand for the interviewee (Easterby-Smith et al., 2021). The concept of packaging innovation which might be seen as abstract and confusing, was mentioned during the interviews since it was necessary to answer our research question. To avoid confusion or misunderstanding around this concept, we made sure to define what it meant and provided the interviewee with the example of Tetra Recart® in order to develop a common definition of the term, as recommended by Easterby-Smith et al. (2021).

We decided to limit ourselves to 15 questions per guide, to ensure we had enough time for the interviewees to answer each question extensively, as well as for us to ask for clarification and follow up questions (Easterby-Smith et al., 2021). After each interview we went back to the topic guide and reviewed the questions, to help the quality of our data and guide our research, following an abductive method (Bell et al., 2022).

Once our interview guides were ready, we contacted our interviewees through emails in order to set up an interview date and time. Within this first email, we introduced ourselves and the topic of our research. We also included three to four questions from our interview guide, for the participants to get more clarity and feel more comfortable before the interview. This allowed them to reflect on their experience, thus providing us with deeper insights (Bell et al., 2022). One limitation of this approach is that their responses might not be as spontaneous and *"real"* (Bell et al., 2022). However, none of the interviews emailed an answer back on the questions before the interview, meaning we captured the knowledge during the interview.

Lastly, we attached a consent form that we had prepared beforehand (see Appendix 3). This consent form informed the participant of the interview recording, transcription process, the storage of the data and who has access to it, as well as their anonymization in our study. We also made sure the consent form was easy to understand and encouraged the participants to ask questions (Easterby-Smith et al., 2021). After reading this document, the participants were asked to reply with a written statement that they have read and understood the document. We sent reminder emails to ensure that all interviewees had replied before conducting the interview.

3.3.2 During Interview

We started each interview by introducing ourselves and our research topic, and reminded the participants that they were being recorded, and that they would be anonymous in our paper. This is important for the participants' comfort and ethical considerations (Bell et al., 2022). A disadvantage of recording is that participants might become self-aware and stressed due to the knowledge of being recorded (Bell et al., 2022). To mitigate this potential stress, we ensured that the participants felt comfortable throughout the interview by remaining attentive to their body language to be able to detect any sign of discomfort, as recommended by Bell et al. (2022).

Both researchers were present at each interview, complementing each other's questions, based on the interview guide and their own perspective and understanding of the topics discussed. Although both researchers asked questions throughout the interview, one was appointed with the main responsibility of leading the interview.

Regarding the interview structure, our short introduction was followed by the questions from our topic guide. Although organized by different themes, the questions were not asked in the same order as in the interview guide, which is typical for semi-structured interviews (Easterby-Smith et al., 2021). Towards the end of each interview, we asked some closing questions to encourage the interviewee to express their personal opinion or emphasize one specific topic mentioned earlier in the interview, or one not yet addressed. These took the form of what Bell et al. (2022) refer to as *"catch-all"* questions; such as *"What are the key lessons you learned from your experience working with packaging?"* Finally, we concluded the discussion by thanking the participants for their contribution to our study.

An aspect that is important to acknowledge is the implications of the interpretative approach that follows a qualitative interview. Since we are interpreting the interviewees' answers and thoughts, there exists a risk of misinterpretation (Easterby-Smith et al., 2021). Additionally, our own values and assumptions as researchers may also affect the interpretation (Easterby-Smith et al., 2021). To address this concern, we were deliberate in how we formulated our questions, for example by prioritizing open-ended questions. In some cases, however, closed-end, interpretive questions (Bell et al. 2022) such as *"Do you mean that [repeating interviewees answer]?"* were needed in order to avoid misunderstanding and ensure the participants' answers were correctly understood. Moreover, to further reduce the risk of misinterpretation in the subsequent analysis, we often used clarifying or probing questions such as: *"Please tell me more"* or *"what do you mean with that?"* as well as *"laddering down"* which consists of asking for examples from the respondent (Easterby-Smith et al., 2021). These techniques also allowed for a deeper reflection from the respondent.

3.3.3 Data Handling and Ethical Considerations

As mentioned above all of our interviews were recorded in order to ensure comprehensive data capture and accurate transcription (Bell et al., 2022). Compared to field notes, audio recordings are more detailed and unbiased (Easterby-Smith et al., 2021). Moreover, recording the interviews helped us transcribe and thereby analyze the interviewees' answers as it allowed us to come back to their exact words and formulations (Bell et al. 2022). This is important for accuracy and a deeper understanding of the topics discussed.

We transcribed by listening and writing and did not use AI as an aid. The data that we collected needed to stay confidential as agreed upon and therefore we did not want to run the risk of using AI tools where the material might be uploaded into the cloud, which is a security risk (See Appendix 5). After the transcription, the recordings were deleted since they were no longer needed and to comply with ethical considerations. We also anonymized the interviewees in the paper as well as when discussing the paper with a third party to protect the individuals as well the companies.

3.4 Analysis Process

The analysis process began with reading through all interview transcriptions and highlighting quotations that appeared relevant regarding the relationship between the different actors. These quotations were then transferred into a table and coded using open coding, which Bell et al. (2022) describe as the first step in analyzing the material. Open coding enables us to identify fragments as Bell et al. (2022) describes and allows us to understand the material without being limited by our theoretic framework. This made it possible to identify insights from the material such as the cooperation regarding the packaging legislation. We did this coding together and discussed the questions to achieve a consensus among the researchers as well as ensure an accurate interpretation of the interviewees' responses, thereby reducing the risk of researchers' biases. We organized the open coding into two broad categories, one about the actors themselves and one concerning their relationships with other actors in the network. This enabled us to get a better understanding of the individual actor, the different relationships and the broader network.

After organizing the open coding, we started the second level of coding which consists of going iteratively between theory and data (Bell et al. 2022). At this stage, the material was analyzed through the lens of the ARA model which helped refine our data and focus on our research aim. This involved revisiting the open coding to identify what the material revealed about the actors, resources, and activities existing within the relationships. We identified actors based on who the interviewees mentioned they interact with. We identified resources-ties by examining what resources each party gains through the interaction. Lastly, we analyzed the activities based on actions taken by each actor with the resources of the relationship. The findings from this analysis are presented in Tables 2, 3, and 4 in the analysis chapter. In addition, particular attention was given to words describing the relationship in terms of character or strength such as *"partnership"* or *"commitment"* as these terms would help in determining the depth and quality of the actor-bonds between the different actors in the network. Activities and resources strength were based on the level of interconnectedness between the partners. Furthermore, the stage of the relationships were addressed based on their history and evolution. This is not presented in table 2, 3 and 4, but discussed in the discussion.

It is important to note that although we used the ARA as a lens to analyze the relationships, it was not applied rigidly. Rather, it was complemented by insights generated through our thematic analysis. According to Bell et al. (2022), a thematic analysis involves identifying patterns across the material, including contradictions, similarities, and analogies that develop into broader themes. In our analysis, examples of these themes included the network as a whole and the upcoming packaging legislation. This combination of theory and open engagement with the material led us to develop an adapted version of the framework, which we present in the discussion chapter.

3.5 Research Quality

The research quality can be considered in terms of *credibility, dependability, confirmability and transferability* (Bell et al.2022). All four terms relate to assessing trustworthiness and authenticity in the research and are well suited for qualitative research (Bell et al.2022).

The first term, credibility refers to accuracy and trustworthiness of the findings and research (Bell et al. 2022; Easterby-Smith et al., 2021). In our research we tried to conduct several interviews from all actors to make sure we represented the actors accurately. For the private labels as well as for the packaging solution provider, we had several participants. This helped represent the actors in a nuanced way since we had gathered several perspectives. Our aim was to do the same for the manufacturer, however, due to restricted access, we only had one manufacturer. This may limit their accuracy and representativeness. However, we argue that having one interview makes the manufacturer represented in this triad, although the portrayal could be improved with more perspectives. Similarly, the manufacturer's perspective of the TP-M and PL-M relationships relies on a single participant and therefore may differ from what could have been learned from a larger number of manufacturer interviews.

To heighten the credibility steps can be taken such as fostering trust between the researchers and participants as well as include steps taken to understand the interviewees in-depth (Easterby-Smith et al., 2021). We fostered trust by listening during the interviews, having open questions and acknowledging their answers. Other strategies taken to ensure accurate understanding included peer debriefing (Guba, 1981). Peer debriefing means that another outstanding person helps discuss weaknesses and hypotheses and results (Guba, 1981), which we did with our supervisor.

The second term is *dependability,* which focuses on the data being reliant (Bell et al. 2022). It requires documentation of the research process as well as keeping a consistency across interviews (Bell et al. 2022). To support our dependability, we provided an in-depth description of our interview process, including selection of participants, a general interview guide for each actor studied (see Appendix 1), as well as an overview of the question formulation and motivation (see Appendix 2), and our analysis process in our method section. Therefore, our in-depth method section strengthens our dependability. Additionally, the actions mentioned above to increase credibility also increases dependability, as they are interconnected (Bell et al. 2022).

Thirdly, research quality can be assessed through confirmability. This concerns ensuring that the findings are shaped by the participants' responses rather than the researchers' personal biases or values (Bell et al., 2022). While complete objectivity is not achievable, it is important to show that the researchers have acted in *"good faith"* (Bell et al., 2022). It is important to reflect on the research we conducted, according to Bell et al. (2022). The data gathered can be influenced by our own subjectivity, interview style and the analysis process (Easterby-Smith et al., 2021). As Bell et al. (2022) points out, reflexivity should be practiced during the research and afterwards, as a form of reflection. The researchers therefore acknowledge that the interpretation of the material may be influenced by personal values, however, steps were taken to minimize the influence (Bell et al., 2022). One example is asking for clarifications during the interview and asking open-ended questions so that the participants could formulate their own independent thoughts. The use of a transcription contributes to the confirmability of our analysis since it allows for us to revisit the original material, reducing the risk of research biases. This is in line with what Bell et al. (2022) and Easterby-Smith et al. (2021) highlight as a benefit of transcriptions. Furthermore, using quotes that summarize or highlight important aspects which we could not capture with writing, helped ensure accurate representation of participants' statements to the reader, in line with Bell et al. (2022). Finally, having discussions between researchers when interpreting the findings is another important action we took to strengthen the confirmability.

Lastly, transferability relates to providing detailed context for the reader such as a rich description of the interviewed actors or setting, to enable readers to assess whether the findings may be applicable in other contexts and to facilitate the replication of a similar study. We provided a rich description of the context of our research including actors interviewed in our method section for readers to *"make judgements about the possible transferability of findings to other social contexts",* as expressed by Bell et al. (2022, p. 370). We researched the relationships that occur between the actors of private labels, manufacturers, and packaging companies, in this specific case of Tetra Recart® to exemplify radical packaging innovation. Our findings may be transferable to other less radical packaging innovations or other food related innovations. It might also be transferable to other innovation networks, including different types of PSP/M/PL or different actors within the supply chain.

4. Analysis and Findings

This chapter first presents the analysis of our data on the dual relationships through the ARA model. Thereafter, we take a step back and dive into the network as a whole by presenting how the relationships affect each other and the network. Lastly, we present our analysis of the legislation as part of the external environment affecting our network.

4.1 The Three Relationships

To understand what each member contributes with and how they are connected, we present each of the dual relationships in separate sections. In each section, a table is presented to provide an overview of the actors, resources, and activities involved in the relationship. We then analyze this relationship in more detail and go beyond the ARA model to highlight other important dynamics.

4.1.1 M - PL Relationship

This relationship takes place between private labels and their manufacturers. An overview of the different actors, resources, and activities involved is provided in Table 2. It is important to note that the private labels we interviewed mentioned that they mostly outsource their production to national brand manufacturers or others only specialized in private labels. For example, interviewee F mentioned: *"I would say in private labels, we have no production."*

	M	PL
Actors involved in the relationship	Sales department	Buyer department Packaging department (for packaging)
Resources involved in the relationship	Production facility including packaging machines Global knowledge about general market trends	Data on consumers/shopper behaviour in the local market Some packaging knowledge
Activities involved in the relationship	Offers price to PL Produces for PL Can invest in new packaging machines Adapts to PL requirements	Gives product requirements (i.e. amount) for M to produce Agrees on price Buy products from M Asks for different packaging options

Table 2: M-PL relationship through the ARA model

Regarding the actors involved in this relationship on the manufacturer side, we identified the sales department since interviewee J, whose role is in sales, mentioned having direct contact with Swedish private labels. When it comes to the private label actors, most of the interactions with the manufacturers occur through the buying department, responsible for supplier selection and buying products for certain categories. Additional contact to discuss packaging innovation and improvements with their manufacturers, occurs through the packaging department of the private label.

It is important to note that within certain private labels, the position of buyer has a high turnover. This was highlighted by interviewee J who mentioned that such changes negatively affect the relationship between M and PL. Conversely, a low turnover leads to a more stable relationship, as it allows the buyers to gain more knowledge about the other actor, for example regarding the manufacturer's specialization and capabilities. Therefore, knowing each other better makes cooperation easier for the actors, as it strengthens the actor bonds and enables *"building a relationship and going deeper than that"* (Interview J). In the quote below, interviewee J expressed their satisfaction in collaborating with Nordic retailers, whose buyers have a low turnover:

> *"The Nordic retailers and the groups we are collaborating with, they have kept people staying. That's another thing that affects the whole process. We have a buyer that we're working with for at least 3 years now. "* - Interviewee J

Regarding the resources for the different parties, the manufacturer has the production facility including the packaging machines. This means that different manufacturers have different packaging assortments, which limit the PL in terms of packaging choices as expressed by Interviewees F and I:

> *"In terms of packaging changes [....] it's really reliant on what machine parts they [manufacturers] have."* - Interviewee F

> *"I have limited control in what I can demand from my suppliers to start using in terms of material because they need to be able to make it in their machine"* - Interviewee I

Additional resources that the manufacturer possesses include knowledge of global market trends due to their collaborations with PLs in different markets. Private Labels, on the other hand, have resources that consist of data on consumer and shopper behaviors in the local market in which they operate. In the interviews, it was brought up that the two actors can combine their resources and collaborate. One case was mentioned where they introduced the same product in a different packaging on a new market. This collaboration was successful, and a win-win situation, driven by the manufacturer. Interview J explains the different resources involved and the how they fit together:

> *"That was driven by us, trying to transfer practices that worked in other markets in different regions of the world [...] because retailers have a very good understanding of the local market. If you are a manufacturer, then you have a significant footprint across Europe, you can see what works and doesn't work in other markets."* - Interviewee J

Even though it was the manufacturer who drove the idea in that specific example, both parties seem open to discussing innovation as expressed by Interviewee J:

“*It works both ways, actually. So, that was mostly identifying a need. And it was done jointly.”* - Interviewee J

In terms of knowledge about packaging material and different types of packaging, an interesting point is that this knowledge was mostly situated on the private label side. It was them who have invested in positions specialized in packaging. On the other side, the manufacturer does not seem to possess the same level of packaging expertise, as highlighted by Interviewee F:

> *“Suppliers and especially small suppliers [...] need the resources for packaging, but they don't have it. So they need to have the support from us, to understand why packaging matters. “* - Interviewee F

In the quote above, the last element in the ARA model: the activities, are also expressed. Interviewee F mentions that they want to help manufacturers understand packaging and build their knowledge about it which relates to actions done by the actors to combine, develop or exchange resources.

When it comes to buying products, private labels choose among different manufacturers who then produce the amount decided at the negotiated price. PL gives a product requirement list which can include packaging requirements. Additionally, interviewee G mentioned that the buyers are also encouraged to ask about different types of packaging.

> *“Our buyers are always asking [talking about packaging], ‘what else do you have?’, ‘what can you offer?’ So it's sort of like a give and take, but of course there has to be an ask for it to exist.”* - Interviewee G

However, the manufacturer is cautious since they need to invest in new machinery which is expensive, so they have to check if more than one PL is interested, by discussing with other PL or their brand strategy if they have their own brand as well.

We further noted that the M-PL relationship is complex, since the pricing remains the most important aspect for private labels’ strategy. This makes the actor bond unstable, considering that PL may switch manufacturer, and therefore break the existing relationship, as highlighted by interviewee J:

> “*It takes a decade to build your trust with any retailer, which can collapse in a matter of months or days. So it's not an easy task*” - Interviewee J

We noticed that PL recognizes this complexity, however, most interviewees have pointed out that they want to sustain a good and long-term relationship. This might complicate the process of innovating together which requires trust and cooperation. Overall, while the actor bonds involved in this relationship are potentially unstable, the resources ties and activity links are rather strong.

4.1.2 TP - M relationship

This relationship involves Tetra Pak® and their customers which are food manufacturers. The majority of these manufacturers produce for private labels, as mentioned by interviewee B "*80% or 90% of our customers in Tetra Recart® [department] are producing for private labels.*" Table 3 presents an overview of the different actors, resources, and activities involved in this relationship.

	TP	M
Actors involved in the relationship	Business development manager for the specific market (within the department of TetraRecart)	Strategic position (unspecified)
Resources involved in the relationship	Knowledge on packaging material and Sustainable packaging Packaging solution portfolio Insights on product categories and consumers Possibility to develop new products (Food development facility, Innovation center, etc) Visibility for M	Investments in packaging machines (can buy of PSP) They have PL as customers
Activities involved in the relationship	"Educate" about packaging options Contract, maintain, etc packaging machines Promote M (to PL) Help M develop new products using their food development center	Discuss strategy since the investment is a long term one Buy packaging solutions from TP Experiment and develop new products with TP

Table 3: TP-M relationship through the ARA model

The actors involved within the manufacturer are people with a strategic position. Considering the cost of packaging machines and machine parts, it is not surprising that the discussions related to them would be done by employees with a strategic role within the company. Within Tetra Pak®, the business development responsible for the market of the manufacturer is the one talking to them about Tetra Recart® as a package.

In this relationship, each actor provides many resources that can be used for several activities.

First, TP brings their portfolio of packaging solutions, knowledge of these products, as well as insights on product categories and consumers. To some extent, TP then *"educates"* the manufacturers about their packaging solution portfolio and how these can fit within the manufacturer's strategy. Together, they also discuss the manufacturer's strategy when it comes to packaging. Indeed, the manufacturer has the capability to invest in packaging machines, including the ones from Tetra Pak®. One benefit of the TP-M relationship for the manufacturer is that adopting TP solutions can help them be more competitive and differentiate themselves from their competitors. For example, they can offer Tetra Recart®, as a complementary package next to their usual can production lines. This is because M is the supplier of private labels who later decide on the packaging format for their products. However, it is important to acknowledge that such investment is a strategic choice for the manufacturers, due to the cost of packaging equipment. Interviewee J emphasized the commitment that comes with investing into a production line:

> *"The lifespan of these packaging lines is not two, three, four, or five years. It's decades. So it's a very long-term commitment and relationship."* - Interviewee J

Once in a contract, Tetra Pak® provides the manufacturer with maintenance, and additional services such as access to their product development facilities. Together, M and TP can discuss and experiment around new products, for example by developing a new recipe in Tetra Recart® 's food development center as mentioned by Interviewer A "*we help customers to understand the market, to co-develop products*".

Another important activity TP can engage in for the manufacturer is to give them visibility to their other stakeholders, including private labels (potential customers for M). This is done by TP who can present all available manufacturers to private labels and therefore creating new relationships between manufacturers and private labels that TP has contacts with. However, some manufacturers may be defensive and not be willing for TP to share their contacts.

The relationship between TP and M can be characterized as a cooperative, as they both want the other to succeed. This is pointed out by Interview A "*If our customer is successful, then also we are successful*". This mutual orientation creates a win-win dynamic, driven by the understanding that cooperation between the two actors enables benefits such as an increase in their respective market share. This is explained by Interviewee J:

> *"They take the time and we take the time to have a joint plan because they also wish to penetrate the market more [...] and of course, gain market shares against their competitors. It's a win-win situation."* - Interviewee J

However, both actors described the relationship in slightly different ways. The manufacturer described it as long-term, and *"strategic"* as illustrated below:

> *"I would call it a strategic relationship with the packaging supplier because they also provide the lines."* - Interviewee J

Tetra Pak® described it as being long-term *“partners”* (Interviewee A and B). They want to support their customers and maintain a good relationship (shown in their support for co-developing products and listening to the manufacturers strategy). While the manufacturer might collaborate with one or few PSP, TP has is in relationships with several manufacturers. This is typical for buyer-seller relationships. However, both actors seem to be committed and willing to collaborate. Therefore, this relationship seems to be rather strong in terms of all elements of the ARA model.

4.1.3 TP - PL relationship

The third relationship we analyze is the one between TP - PL. An overview of the different actors, resources, and activities involved, is provided in Table 4.

	TP	PL
Actors involved in the relationship	Retail manager for the Nordics (within TetraPak) PL global contact	Buyers or category managers Packaging specialist (new)
Resources involved in the relationship	Knowledge on packaging material and Sustainable packaging Packaging solution portfolio Knowledge on global trends Knowledge on other PL Packaging insights from end-consumers M contacts Possibility to develop new products (Food development facility, Innovation center, etc) Possibility to make mock-ups	Product ideas and a portfolio of products Is also the retailers = access to the store Buyer of M Influence M in terms of packaging requirements
Activities involved in the relationship	Present packaging solution portfolio Present new opportunities for PL category expansion with TP packages Provide PL with M contacts Make mock-ups & food development for PL	Listen to TP presentations and ideas Discuss ideas on expanding to new categories with TP (incl. mock-ups or food development) Change their packaging requirements for M, based on TP conversations Switch to an M that has TP packaging

Table 4: TP-PL relationship through the ARA model

When identifying the actors, it came forward that on TP's side there exist two different departments that have contacts with private labels. One consists of retail managers which have contacts with retailers regarding TP's entire portfolio, and the other one is Tetra Recart®, more specifically a global private label contact focused on the Tetra Recart® package (see Table 4).

In terms of the relationship between TP and PL, it appears that TP wants to develop their relationship with PL. This was limited earlier in TP's history, as indicated by Interviewee A:

> *"As a company we did not have the capabilities, I would say, historically, to work with private labels." - Interviewee A*

TP now views PL as an important actor in the retail environment, which Interviewee C highlights by saying that:

> *"The private label trend in Europe is impossible to stop, so you can join it or you can fail it."* - Interviewee C

By *"joining it"*, Interviewee C hints that TP wants to develop a closer relationship with PL. Interviewee C stresses further that it is really important to establish contacts with private labels since they are more innovative and powerful than before, Interviewee C continues:

> *"[talking about private labels] it is no longer a cheap low quality option, they are the options that develop the market [...] Unstoppable and innovative is no longer a low quality product."* - Interviewee C

When it comes to the private label strategy the innovation aspect was highlighted by Interviewee G who stated that: "*I think we're more innovative nowadays than we were in the beginning*" but another interviewee contrasted by saying that:

> "*We're not good enough at it [talking about innovation]. I think we should be better in order to stand out from our competing supermarket chains.*" - Interviewee H.

Both interviewees G and H mentioned that PL should not copy national brands and make it cheaper but rather innovate themselves. Since private labels want to innovate more and focus on packaging, they have employed packaging specialists. One benefit of these roles is an easier and direct connection with packaging companies instead of relying solely on manufacturers' input on packaging innovation opportunities, given their limited interest in innovation (interview H). Private labels no longer need to be *"2 steps away"* as expressed by Interviewee H:

> *"I tried to get the suppliers to supply us with the contact information for their packaging suppliers. But that was really difficult, sort of, to get those 2 steps away. So, now that [packaging specialist] is on board, my hope is that they will be able to work with our*

suppliers and their packaging suppliers. We sort of bypass our suppliers." - Interviewee H

After initiating a relationship between TP and PL, Tetra Recart® 's role seems to be to *"inspire"* (Interviewee D) PL to move to other categories such as *"from crushed tomatoes to soups"* (Interviewee D). Another role that the packaging company has, according to Interviewee D, is being a *"match maker"* between manufacturers and private labels, as illustrated bellow:

"I am like a match maker, in this case. We know of the producers let say tomatoes so we then talk to [PL] about the idea [...] Here are five names for different tomato producers in Italy." - Interviewee D

Our interviewees from both sides recognized that PL is not interested in talking to TP only about their packaging portfolio, but rather wants to gain additional benefits, as recognized by interviewee E:

"That's why they also have something to gain from me having a conversation with them. There is an added value for us having a meeting." - Interviewee E

To give value to PL and have meaningful interactions, TP uses resources and activities such as knowledge of trends, innovation facilities, etc. The private labels are open to these discussions, although also aware that TP is also interested in pitching their products. Moreover, PL does not see themselves as a direct buyer, rather a discussion partner. This is well summarized by interviewee F:

"We can only be a discussion partner and we don't have any production. We don't have that machine. We're a potential buyer, but we can't dictate anything." - Interviewee F

Additionally, Interviewee F highlighted that they think of the relationship as friendly and a partnership where *"we want to move in the same direction"* in terms of trying to innovate together.

What stood out during our analysis was TP's preference in terms of PL actors. Indeed, rather than only interacting with packaging specialists, they also seek contacts with people within category management, seen as *"decision-makers"*. This is because these are the ones deciding which manufacturers will make their products. The level of importance is pointed out by Interviewee C:

"Reach the relevant people in the retail organization, normally category managers, buyer departments then on a second estate we could say packaging or sustainability teams." - Interviewee C

In addition, interviewee E highlighted that in order to have access to the category management, TP first should have contacts with the packaging specialists who act as the *"gatekeeper"* and can therefore become their *"best ally"* and *"open the door to the category ones"* (Interviewee E). This is because they impact the PLs decision and need to be accepting of the packaging solutions:

> *"The packaging department is also your kind of best ally. So if you have those, then you get the door opened to go to the category ones [...] the packaging person is kind of my gatekeeper. And then he can let me through to the other parts. But if I don't manage that relationship well enough, then I'm always gonna stay there."* - Interviewee E

Both PL and TP are open to discussion but remain aware of each other's interests. Within the PL, margins are still an important aspect and there is not so much money to move around (Interviewee B, D, and F). Therefore, even though there is interest, they are still limited in investing in the packaging/partnership. Currently they remain as a discussion partner. For PL, talking to packaging companies is not the first priority, but are still happy to try to innovate together. For TP, they want to talk to PL but also keep their own interest in mind. For example, when presenting category opportunities for private labels, they only focus on categories that can be packaged in TP packaging.

When it comes to radical innovation, PL seems to prioritize their strategy over their concern of the end-consumer. We understood that, while PL is concerned about the end-consumer, it does not make them less open to innovations. Indeed, when discovering a radical innovation that aligns with their price and sustainability strategy, private labels sometimes *"take a chance"* and do not necessarily do big consumer surveys before launching. Rather, they reason about how the consumer may react, as explained below by interviewee G:

> *"Sometimes we take a chance [talking about an example of radical innovation they adopted], [...] we've been debating, what would the customer kind of like, agree on?"* - Interviewee G

Interviewee E also mentioned that PL sometimes takes a chance to adopt innovative products from TP if they have an established relationship:

> *"And so I would say relationships are everything. Then they can even go for things that they are a bit unsure [...] they give it a shot."* - Interviewee E

Overall, the actor bonds, resource ties, and activity links involved in this relationship are in development, and therefore not as strongly interconnected.

4.2 From relationships to the network

As expected from the literature review, we found multiple examples in which one actor or one relationship affected the other actors and the network as a whole. We present some of them below.

Starting with Tetra Pak®, our interviewees expressed that the company does not want to interfere in the M and PL relationship when it comes to price. This is because TP realizes that M and PL are in a buyer-supplier relationship and have their own price negotiations. Moreover, TP knows the price at which they sell their packages to M but are probably not aware of the margins and pricing strategy these manufacturers have towards private labels. We found it interesting that although part of a triad, the actors seem to remain in a linear supplier-supplier-buyer dynamic when it comes to pricing.

However, TP still talks about prices with both PL and M as part of the value they can get when moving their products from cans to Tetra Recart®. Indeed, our interviewees mentioned that both PL and M want the lowest price possible. Furthermore, our interviews with Tetra Recart® highlighted the importance for such radical packaging innovation to create value throughout the supply chain (for both M and PL). This was explicitly mentioned by interviewee D:

> *"You need to describe the value over the food value chain [...] the producer would make this kind of better margins, better money [...] the retailer later on he can save X,Y and Z due to it being logistically better"* - Interviewee D

Another interesting insight when it comes to TP is that the company can use their relationships to *"push"* their innovation from two different paths. First, they can encourage manufacturers to adopt the product and then the manufacturers are the ones suggesting this innovation to PL by having it as part of their assortment. The other way TP can promote their innovation is by presenting it to PL, who can then suggest it to the manufacturer or even make it a requirement for their products. These two paths also come with different challenges.

When it comes to the first path, one challenge lies in the manufacturer's concern about the costs of packaging innovation. This makes them risk-averse of adopting it and therefore first want to have the assurance that multiple PL are interested. As mentioned above, a new machine is an investment. Another challenge is that once they have bought the machines, manufacturers still have to propose the new packaging to the private labels, with the price they have decided, and therefore need to convince PL about the benefits for them. In the quote below, interviewee D emphasizes that it is difficult to communicate the benefits of the package for private labels through the manufacturer:

> *"The producer would make this kind of better margins, better money [...] then you have to tell the producer to tell the retailer later on he can save X,Y and Z due to it being logistically better [...] It is a hard sell."* - Interviewee D

This path is therefore pretty complicated, which explains TP's interest in having direct contacts with private labels, therefore *"skipping"* the manufacturer.

The second path also comes with challenges. First, PL may not feel like they can or should push the innovation. As mentioned above, they can give suggestions, but ultimately they are a *"discussion partner, not the buyer"* (Interviewee F). Additionally, PL are careful not to push ideas too much since they are a buyer of the product and have to accept the price that M is going to give them. Another aspect that PL has to take into consideration, is the balance of consumer acceptance of an innovation and creating excitement. Despite these challenges, this second path comes as an advantage for TP: having PL on their side. Private labels is the actor with decision power when it comes to packaging innovation, as expressed in these quotes:

> *"It is the retailer here who asks for something and the whole chain adjusts to that request."* - Interviewee J

> *"The decision comes from the retail [...] because in the end manufacturers will produce whatever the retailer or private label wants."* - Interviewee C

Lastly, another finding that stands out from our analysis of the network is the fact that the three actors do not systematically engage in discussions all together but rather tend to keep their relationships separate. This is likely to come from the fact that price is still essential, and that there is no unique path or clear driver that leads the actors and the chain to adopt packaging innovations.

Tetra Pak®, however, wants to encourage these conversations with all three actors together to discuss *"the best recipe, etc."* (Interviewee B). While still not interfering in the price discussions which remain between M and PL, TP wants the whole value chain to gain benefits. However, it is difficult since M does not want TP to interfere with the connection between M and PL. This was noted by Interviewee B, who suggested that manufacturers may have an apprehension to this type of meetings. This is, once again, due to the uneven dynamics in the TP-M relationship where TP can introduce PL to multiple manufacturers.

4.3 Packaging Legislation

As presented in Section 1.1, PPWR is an upcoming EU legislation regarding packaging which includes fees for different materials depending on their recyclability. Furthermore, the use of recycling logos will be stricter. As we expected, many of our interviewees mentioned this legislation, its consequences, and the actions they are taking (Interviewees F, G, H, I, J). That said, in this section we focus on the impact for the interactions in the network.

Starting with private labels, the packaging specialists are aware and care about the legislation. PL will be the actor that is the most affected since they become responsible for the material used and will face the EPR fees. This impacts the relationship between M and PL as private labels need more information from the suppliers about packaging materials, as explained by Interviewees I:

> *"PPWR now changes and we become the manufacturer. [..] So I will need deeper insights in what my suppliers are doing and what they are demanding from their material suppliers. They need to be more transparent with me as well."* - Interviewee I

From the manufacturing side, Interviewee J mentioned that they are cooperative and want to provide the retailer with the right details.

> *"Every retailer asks whatever they want to ask, and we mostly comply with the requirements."* - Interviewee J

This was also mentioned by interviewee I who said that their manufacturers are usually open to dialogs. However, sometimes the manufacturer does not have all the relevant data. This impacts the interactions in the network where PL are more interested to talk to packaging solution companies such as TP, having a closer dialogue, as explained by Interviewee I:

> *"My ambition is to have closer dialogue with the material suppliers since they are the ones supplying me with the relevant data and information, I need to be compliant with PPWR. And [...] many suppliers don't have a specialist, so it's easier for me to get the information directly from the material supplier."* - Interviewee I

Several Interviewees mentioned being part of different groups currently discussing the legislation and the future. Interviewee E mentioned discussions with other private labels, while interviewee F highlighted being part of a group with different actors of the industry:

> *"A group of people in the supply chain that has come together to find ways forward with recycling [...] we [PL] are advising what we need and what we think is the way forward, but we don't have the solution. We need to discuss with everyone to find solutions [...] They [packaging companies] are, of course, the most knowledgeable about their products and their materials [...] to develop [the innovation] "* - Interviewee F

The legislation emphasizes a common goal for all parties, and the current discussions seem like a first step towards three-party meetings where the actors need to have a *"closer dialogue"* as well as be more *"transparent"* (Interviewee I), showing that there is need to form closer connections.

Lastly, although not discussed explicitly in our interviews, TP is also impacted by the legislation in two main ways. First, PL will ask for information, as mentioned above. Additionally, their packaging portfolio will also be impacted. Some packaging might have to be improved to remain low in fees and thereby attractive to customers including PL. Another example is the stricter requirements surrounding the recycling label which may lead the company to reconsider which products are eligible to carry it.

5. Discussion

Our analysis and findings revealed several links with prior literature along with new insights. They are presented in an overview table in Appendix 3. In the following sections, we focus on the most interesting findings on three different levels: PL and innovation, the relationships, and the network. Finally, we present our revised model (and discuss how it contributes to the prior research presented in the literature review).

5.1 PL and Radical Packaging Innovation

After analyzing the results more closely, it can be confirmed that private labels current strategy encompasses innovation aligning with prior literature (Beckeman and Olsson, 2011; Abril and Martos-Partal, 2013; Grewal, 2019; Margulis, 2022). Additionally, this finding is in line with Gielens et al. (2021), who highlighted innovation as part of their smart PL strategy, which they see as essential for PL to survive. In accordance, our findings confirm that innovation, more specifically packaging innovation, is essential for PL as it is part of their agenda. This echoes with Beckeman and Olsson's (2011) findings which highlighted that private labels recognize packaging as a way to innovate. This innovation focus is further reflected by the presence of packaging specialists within private labels.

First, our analysis revealed that these packaging specialists already engage in ongoing discussions with their manufacturers regarding small packaging improvement. This shows that private labels already implement packaging innovations on the two first levels described by Simm and Trott (2014). In addition, packaging specialists are also in contact with PSP. This indicates that Swedish private labels are not lacking packaging expertise which Simm and Trott's (2014) pointed out as a hinder for radical packaging innovation. Rather, they appear to actively pursue innovation opportunities.

Lastly, having internal packaging knowledge that they use with other actors indicates that private labels have adapted their resources in order to better communicate with the other parties in their dual relationship. This goes in line with Simm and Trott (2014) who stated that companies that are oriented towards packaging format changes are more likely to collaborate with packaging companies *"thus capturing the opportunities from the technologies from the packaging suppliers"* (Simm and Trott, 2014, p. 2023). Moreover, this is an example of a company developing resources to be able to use other actors' resources which according to Håkansson and Snehota (1995) is essential for relationships to function.

Another insight gained from the analysis is that private labels have insights on buying behavior and consumers that they can use to identify consumer needs, as previously mentioned in the literature (Beckeman and Olsson, 2011; Gielens et al., 2021), However, this data does not seem to be essential in the radical packaging innovation process. Moreover, PL seems to be aware of the end-consumer's reaction to radical packaging innovation, but they do not appear too concerned about the risk. This also shows an open mindset to innovation which is important in order to innovate as mentioned by Beckeman and Olsson (2011) and Sbonelo Gift Ndlovu (2024).

Besides confirming that innovation is important for private labels, our findings also provide hints that PL will keep innovating in the future. Indeed, our interviewees have expressed that PL should be even more innovative suggesting that PL is not yet living up to their full potential when it comes to packaging innovation. This also indicates that private labels may not have fully developed their packaging strategy yet and have the possibility to further develop their resources regarding packaging innovation and use them in their relationships with M and PSP.

The upcoming PPWR legislation gives more responsibility to private labels in terms of packaging, which further suggests a continuity for private labels to look into radical packaging innovation. This external force can be seen as an opportunity for private labels to reflect on their packaging development strategy. Additionally, the legislation impacts the interactions between PL and M and PSP, as PL needs to collect extensive packaging information from these two other actors, leading to a higher dependence in both relationships for PL.

Together, our findings point towards a further evolution of PL strategy, where collaboration with other actors will be key to keep innovating in terms of packaging and comply with the legislation.

5.2 Relationships

Throughout this section, we dive deeper into the relationship between private labels and packaging solution providers, as we found this relationship to be the most interesting to discuss. For other relationships such as PL- M, see Appendix 4. We will discuss the network as a whole in the next section.

5.2.1 PL - PSP relationship

As indicated in the analysis, PSP and PL are both interested in developing a relationship for radical packaging innovation, which confirms the signs of a relationship described in previous research (Beckeman et al., 2010; Beckeman and Olsson, 2011; Simms & Trott, 2014). In this sense, the PSP is moving from being a supplier's supplier to becoming a more central actor in the PL radical packaging innovation network. This complements Bombaywala and Riandita (2015) who suggest that PSP should have a more strategic role.

As observed in the analysis, PSP can become more customized to PL as an actor by developing roles to specifically talk to decision-makers within private labels. When establishing a relationship, adapting to the other actor is essential, as described by Håkansson and Snehota (1995). This also supports Simm & Trott’s (2014) research which pointed out the importance of having the right point of contact to be able to innovate. However, our findings indicate that for PSP, reaching the right actor within PL can be complicated. Indeed, packaging specialists act as *"gatekeepers"* who stand for a specific type of knowledge and need to be on board for the decision-makers to accept the relationship with PSP. This reflects Fuller's (2004) point that different departments bring different expertise. Therefore, it seems that having multiple connections through different departments is essential for building a strong relationship and to innovate, where multiple conversations can be held such as conversations about sustainability or packaging. It is therefore important to keep a nuanced view of the actor aspect in the ARA model, signaling that there can be multiple actors in a relationship.

Having a designated role within TP to handle PL opens up possibilities to communicate easier and build a relationship which is an important step before resources such as knowledge or ideas can be transferred. In turn interviews on the PL side expressed interest in developing a deeper relationship, confirming Beckeman and Olsson's (2011) suggestion. Additionally, this willingness to collaborate from the PL side is essential, since a relationship cannot be one-sided as Håkansson and Snehota (1995) highlighted.

5.2.2 Expanding the ARA model with relationship stage

The ARA is a useful model to assess the connections to other actors in terms of actor-bonds, resource-ties and activity-links. However, we argue that it only allows for a *"snapshot"* of the situation at one point of time. We therefore emphasize that a more overall assessment of the relationship needs to be included, taking into account the history and evolution of a relationship.

Throughout our analysis of each dual relationship, we realized that they were not all at the same *"stage"*. However, this was not visible through the lens of the ARA model alone, even though it recognizes that relationships evolved over time. Considering that our relationships were at *"different stages"* of their evolution, we decided to add a fourth element to the ARA model that we called: relationship stage. We based this on our analysis of the strength of actor-bonds, activity-links and resource-ties as described in the method section.

When it comes to the relationship between PL and PSP, we concluded that it is at an early stage and will likely evolve, since the resources and activities are currently not fully developed. However, considering the strength of their actors, resources, and activities, the other two relationships were at an established stage. This is reinforced by their longer history in collaborating when it comes to innovation.

5.3 From Relationships to a Network

In this section we discuss our radical packaging innovation network and highlight the role of packaging solution providers.

5.3.1 The Radical Packaging Innovation Network

In our analysis it was observed that the companies' relationships impact other companies in the network. We further uncovered two different paths that PSP can use to spread their innovation in the network. Coming back to the second path, where PSP presents their innovation to private labels in the hope that they will in turn suggest M to change their packaging. This second path confirms Beckeman et al. 's (2010) recommendation that PSP should interact with PL more directly. Additionally, it is interesting to note that the ideal result of this path would be for PL to change their products requirements towards M, and therefore *"forcing"* them to adopt the package. An implication of this finding is the possibility that private labels have a certain power that PSP may be trying to access, suggesting that PL is the key player in this activity chain, who has the power to talk to M and who is the actor that decides what packaging to put in the shelves. PL being a key actor in terms of decisions was also reported by Hogarth-Scott and Parkinson (1993) and Sutton-Brady et al. (2017) who indicated that private labels are the ones with the power in the supply chain.

Even though private labels are the ones suggesting ideas and packaging improvements, they are still dependent on the machines of their manufacturers and the technology available. This aligns with previous research (Fuller, 2004). Our findings further reveal that private labels remain careful when it comes to pushing innovation ideas to their suppliers, since they are a buyer of the product and will need to negotiate the price that these manufacturers will offer them, once the innovation is implemented. This illustrates the complexity of their relationship which Wu et al. (2021) and Bengtsson and Kock (2000, cited in Beckeman et al., 2013) already pointed out.

Another finding that stood out from the results reported earlier is the fact that the three actors do not systematically engage in discussions all together. Instead, they engage in dual relationships which affect each actor involved and in turn, their relationship with the third one. Our interviews revealed that two actors (PSP and PL) have shown interest in having interactions all together. Therefore, there might not be a single driver of an innovation, instead, looking at common goals and seeing how resources can be used more effectively to innovate is a more interesting point. We argue that common goals, such as for example an increased interest in packaging innovation due to the legislation, are likely to push in the direction of such three-actor discussions.

5.3.2 The role of PSP in the Network

Based on our analysis, we further argue that PSP should have more of a strategic role in this network, rather than being seen solely as the supplier of the manufacturer, as Bombaywala and Riandita, (2015) suggested. They provide technical knowledge and innovation that can be used to help both M and PL strategically to differentiate themselves (Huang et al., 2020). For M it means being able to extend their packaging assortment. For PL, it means fulfilling their innovation ambitions and competing with other private labels. This confirms Simm & Trott's (2014) statement that PSP is an essential actor for radical packaging innovation.

Furthermore, as mentioned in the analysis, PSP is not only a supplier for M, but can also become a sales channel. This was mentioned by our interviewees in TP and described as being a *"matchmaker"* for manufacturers and private labels by sharing M contacts with PL. Doing so makes packaging companies more central to the network of radical packaging innovation within private labels.

5.4 Our Model after the Analysis

Returning to the model presented before the analysis section, which included the three actors forming our radical packaging innovation network, their dual relationships, and the legislation surrounding the network, this section introduces our revised model (Figure 4). This improved version includes changes, based on our findings and discussion.

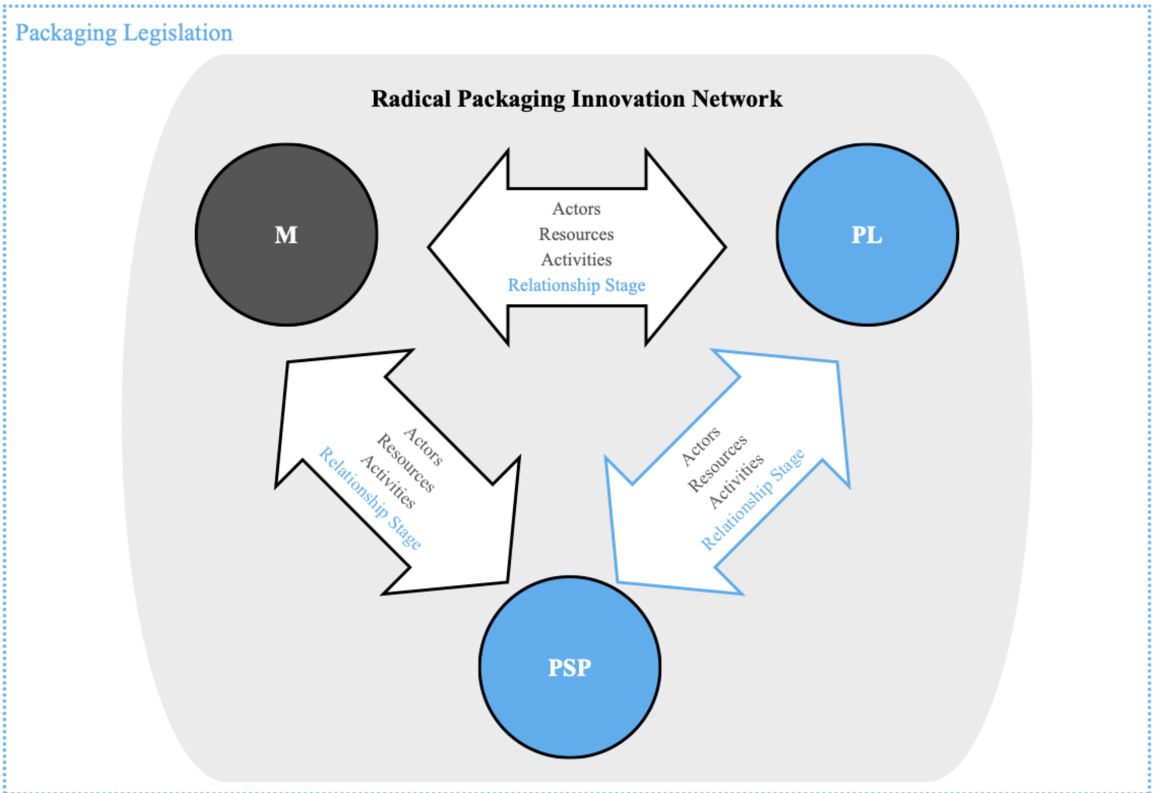

Figure 4: Our Model after Analysis

When it comes to the actors (PL, M, and PSP), we have made PSP and PL blue to highlight their central role in the network. We confirm that PSP has a key role in the network, as they have the resources needed in order to produce the radical packaging innovation. They should therefore not be seen as a supplier of a supplier, but rather as a key actor in our triad. Moreover, private labels' focus on innovation and knowledge regarding packaging also highlight their importance in our network.

The ARA model allowed us to better understand each relationship by examining them closely, based on the actors, resources, and activities involved. Therefore, the model enabled us to confirm the relationship between PSP and PL which is now illustrated by a blue arrow (no longer dotted). Additionally, our network view revealed that there exist different types of relationships between the different actors. We therefore extended the ARA model with a *"relationship stage"* dimension, as illustrated in our revised model.

Moreover, the network level is still present, although not highlighted, it worked as a basis to allow for a more nuanced view of the relationships in the radical packaging innovation network. Another reason is that the three actors are interconnected but are currently not extensively working together as a tight network in terms of radical packaging innovation.

Lastly, the legislation is also illustrated in blue since, as expected, it has impacted the network as a whole, including the actors and their interactions, thereby forming the macro-level. Additionally, our finding that the actors integrate their resources to meet the legislative requirements, highlights how shared goals can serve as important drivers of innovation.

What started as multiple dyadic relationships is a triad which the network view has allowed us to see. Overall, our model complements the ARA by including a more complex and nuanced view with a network perspective to examine the radical packaging innovation network. We also argue that adding a relationship stage to the ARA model further complements the description of relationships. This shows that innovation in PL, especially radical packaging innovation is complex and involves multiple actors.

6. Conclusion

This thesis has studied the relationships between private labels, manufacturers, and packaging solution providers in the context of radical packaging innovation, with the following research question:

In the context of radical packaging innovation, what do the relationships between private labels, manufacturers, and packaging solution providers look like?

To answer this question, we conducted 10 semi-structured interviews with one interviewee working at a manufacturer, four at Swedish private labels, and five at a packaging solution provider. To analyze our data, we used the framework of activities-resources-actors (ARA) as well as a network perspective, in order to understand the dual relationships and how the actors interact as part of the radical packaging innovation network.

Combining two views allowed us to examine the radical packaging innovation network on three levels, as presented in Figure 4. First, the ARA model allowed us to better understand the dual-relationships involved in the context of radical packaging innovation: M-PL, M-PSP, and PL-PSP, therefore contributing to a micro-level analysis. In addition, the network perspective allowed us to examine the relationships on a meso-level by incorporating the actors and their relationships in a triad. Lastly, the upcoming PPWR legislation was incorporated at the macro-level, impacting the network as a whole.

From the discussion of our empirical findings, we can conclude that Swedish private labels are interested in packaging innovation, including radical ones. We further argue that this interest will keep growing considering the environment they operate in intense competition, packaging legislation, etc. Another conclusion was that private labels view packaging innovation as highly important for their strategy forward and realize its potential even though the low-price part of their strategy might hinder them from reaching their full innovation potential. Furthermore, we confirm that packaging solution providers and private labels have a relationship and the central role of packaging solution providers in this network. Even though their relationship is at an early stage, we argue private labels and packaging solution providers are likely to further develop their relationship over time as both actors invest resources in each other. We also confirm the importance of the legislation as a driver for radical packaging innovation.

This study contributes to various literature streams. First, we contribute to research on private labels. Looking specifically at radical packaging innovation allowed us to provide valuable insights on private labels' strategy in terms of innovation (Beckeman and Olsson, 2011; Abril and Martos-Partal, 2013; Grewal, 2019; Gielens et al., 2021). Additionally, examining the relationship between M and PL with a network view allowed us to contribute to existing knowledge on the dynamics of this complex relationship in the context of radical packaging innovation (Bengtsson & Kock, 2000, cited in Beckeman et al., 2013; Wu et al., 2021).

Secondly, we give more insights on packaging within private labels. Indeed, this study contributes by providing contemporary insights of how private labels engage in radical packaging innovation (Simms & Trott, 2014; Jiménez-Guerrero et al., 2015). This is increasingly relevant considering their growing innovation strategy, where packaging is central, and considering the context of packaging legislations as an additional driver (Fuller, 2004).

Lastly, we complement existing literature that has provided insights on packaging innovation (Fuller, 2004; Rundh, 2016) and the involvement of packaging solution providers for radical packaging changes (Beckeman & Olsson, 2011; Simms & Trott, 2014) with a focus on private labels and the case of Tetra Recart®. Furthermore, analyzing PSP's relationship with both M and PL as well as their role in the radical packaging innovation network, enabled us to fill missing knowledge on PSP and how they manage their relationships with external stakeholders in the context of innovation (Bombaywala & Riandita, 2015; Giacomarra et al., 2020).

6.2 Theoretical implications

This study extends private label literature by identifying the relationship with PSP as an innovator enabling radical packaging innovation. Additionally, adding the new dimension of the relationship stage to the ARA model gives it a better nuance and overview of the relationship. Furthermore, adopting a network view allowed us to gain an overview of the actors' interaction and influence on each other in the context of radical packaging innovation. We believe that our model (Figure 4) provides nuances and more perspectives when analyzing the relationships in a radical packaging innovation network, capturing the broader dynamics of the network as a whole.

Lastly, in a similar way as Wu et al. 's (2021) private label management framework, our overview of the radical packaging innovation network allowed us to identify the upcoming packaging legislations as part of the broader environment surrounding and impacting the network. Given the dynamic nature of the PL context, it is likely that additional external factors exist in the PL environment. We suggest that our model has potential to study other B2B relationships PL engages in, in other innovation contexts.

6.3 Practical implications

The findings from our study are valuable for the three actors involved namely: food manufacturers, private labels, and packaging solution providers. First, reflecting on the presented model can help these organizations better understand the complexity of radical packaging innovation. Additionally, they can gain a deeper understanding of each other, including strengths and limitations. This research also enables them to reflect on and evaluate their relationships with other actors in terms of the actors, resources, and activities currently involved. Based on this evaluation, they can consider whether some relationships should be strengthened to better support radical packaging innovation.

This model may also serve as a practical tool for evaluating each organization's position in the network. This creates a foundation for understanding the current dynamics of the network and contributes to more informed discussions between actors regarding potential collaborations for radical packaging innovation.

When it comes to private labels, this knowledge is beneficial especially for packaging specialists but can also benefit other departments interested in innovation. Private labels can reflect on their position as a driver for innovation since their packaging strategy influences the network (if they do not want to innovate, the innovation will not happen). They can also gain a clearer understanding of the value and expertise of packaging solution providers and how they can contribute to the development of radical packaging innovation and reflect on if they want to further develop this relationship.

For packaging solution providers, this research can be useful for assessing their resources and activities in relationships with the other actors. This seems of particular relevance for strategic positions. Additionally, this research can help these companies to learn more about private labels' strategy. This may help departments in contact with private labels in developing a deeper relationship with this actor.

6.4. Limitations and Future research

When it comes to the limitations of this study, one is that this research only incorporates one market (Sweden). There might be differences with other markets which future research can cover by doing a similar study of Tetra Recart® in another market. Furthermore, a more global view would also be interesting.

Another limitation is that since our context lies in radical packaging innovation, there may be a different dynamic in a network that uses more incremental packaging changes. For example, the PSP may have a less strategic role. This is something that future research can investigate. Future research can also compare different cases of radical innovations.

What future research also can contribute with is to interview other packaging solution providers to gain an insight into the difference between PSPs actors since they have varying resources and products. This might impact the roles in the network and the constellation.

Another important aspect is that the relationship between PL and PSP could be reevaluated in the future since it is still at an early stage and therefore likely to develop further. Moreover, considering that the PPWR legislation will be implemented in the near future, changes in the relationships and the dynamic of the radical packaging innovation network are likely to occur, which future research can investigate. Lastly, other environmental aspects can be included in future research.

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Appendix 1 - Interview Guides

Name: …
Position: Tetra Recart / Tetra Pak …
☐ **Signed the consent form?**

Date: ../..
Length of the interview: .. min

Question examples:

1. Could you briefly describe your role and your main responsibilities?
2. What types of customers do you usually have contact with? PL or NB manufacturers?
   a. How would you describe your interactions with customers?
   b. How would you describe the key differences in working with Private Label customers versus National Brands?
3. What types of knowledge and capabilities do you bring to your customers?
4. How would you describe Tetra Recart within the supply chain of manufacturers (NB, PL, both) and private labels?

Notes

Transcription

Example of interview guide for packaging company

Name: …
Position: … at Private Label 1

- ☐ **Signed the consent form?**

Date: ../..
Length of the interview: .. min

Question examples:

1. Could you briefly describe your role and your main responsibilities?
2. Could you briefly present the different PL tiers and the strategy behind them?
   a. What types of manufacturers do you usually work with for your PLs? Is it your own out do you outsource (NB manufacturer or 3rd party only for PL)?
3. In terms of innovation, what are your thoughts on how PL innovate?
   a. Are they driven? Copying? Is it complicated?
   b. Is it different for the different PL brands / tiers?
4. You are mostly working with packaging, how does that work with or fit into PL?
   a. Do you think packaging is an important element for PL, or is it sometimes forgotten? Why?
5. Is packaging something you think PL would use as a way to innovate / differentiate?
   a. Do you think it would be the case more for new products or repacking of existing products?
6. How would you describe your relationship with TP or other packaging companies?
7. How would you describe your relationship with producers/manufacturers?
8. What matters when creating relationships with other actors, in terms of innovation?
9. How would you describe PL in a network?

Notes

Transcription

Example of interview guide for private label

Name: …
Position: … at Manufacturer 1

- ☐ **Signed the consent form?**

Date: ../..
Length of the interview: .. min

Question examples:

1. Could you briefly describe your company?
    a. What are the products you make?
    b. Do you only produce for PL or do you also have your own brand?

2. Could you briefly describe your role and your main responsibilities?

3. Can you describe your experience collaborating with Private Labels?
    a. What are the steps involved when you interact with private label customers?

4. What types of packaging lines do you have for your different products?
    a. How does it work for you to get new packaging lines?

5. What kinds of product adaptations or packaging customizations are usually requested?

6. Would you say that innovation is important? For you or for your PL customers?

7. How would you describe your relationship with packaging suppliers?
    a. Do they introduce new packaging? Collaborate?
    b. What role do packaging companies play in supporting your goals?

8. Which actors have the greatest influence over packaging decisions?

Notes

Transcription

Example of interview guide for manufacturer

Appendix 2 - Interview Questions

Categorization	Questions regarding	Purpose and Theoretical Foundation
Introduction / Background	Could you briefly describe your role and your main responsibilities?	We wanted to understand their position, daily tasks, and main responsibilities.
	Could you briefly present the different PL tiers and a bit of the strategy behind them?	This is a question we asked our PL interviewees to get an overview of their brand portfolio.
	What types of customers do you usually have contact with (Manufacturers, PL, NBs)? How would you describe your interactions with them? Within retailers what types of departments do you usually have contact with?	We asked these questions to our interviewees within Tetra Pak® to better understand their role and their interactions with the other actors.
	Are the customers similar or different throughout the European market? How would you describe the European market and compare that to the Swedish market?	These are questions we asked our interviewees within Tetra Recart® to understand how they describe their relationships with other actors in different markets
	Could you briefly describe your company? What are the products you make? Do you only produce for PL or do you also have your own brand?	We asked these questions to our manufacturer interviewee in order to get to know the company better, what type of manufacturers they are, know more about their customers, etc
Innovation	In terms of innovation, what are your thoughts on how PL innovate? In terms of innovation, what does the decision process look like? What drives innovation?	These are questions we asked all actors, to collect their thoughts on private labels and the role of innovation in their strategy.
	Which actors have the greatest influence over packaging decisions? How important is packaging innovation within your assortment strategy? What are your thoughts on radical packaging innovations (e.g., Tetra Recart®)?	Here we wanted to discover the importance of radical packaging innovation for each actor.
Actors	Who exactly do you have contacts with, within retailers/manufacturer/PSP side?	This is a question we asked our interviewees (TP, PL, M) to understand which department or position they interact with, within their interactions with TP/PL/ M)
	What role does (PSP/M/PL) have when it comes to innovation?	Here we asked about the roles when it comes to innovation processes.
Resources	What types of knowledge and capabilities do you bring to your customers?	We asked this question to our interviewees within TP and M, to understand their view on the resources they bring to their relationship with PL.
Activities	What are the typical interactions you have? What do you talk to them about?	This is a general example of a question we asked our interviewees to understand the activities they engage in, with another actor.

	What are the steps involved when you interact with private label customers (develop products together, potential adaptations, packaging options, etc)? What kinds of product adaptations or packaging customizations are usually requested?	This is a question we asked our manufacturer interviewee to better understand the activities involved in the M-PL relationship, when it comes to packaging innovation Here we wanted to see how much and what M has to adopt to PL.
Relationship questions	How would you describe your relationship with What role do packaging companies play in supporting your goals? What matters to you when creating relationships with other companies, in terms of innovation?	This is a question we asked PL and TP to understand the dynamics of their relationship with manufacturers Here we wanted to discover how PSP helps M by providing their product. We asked this questions to all actors, in order to understand their thoughts on their relationships within the radical packaging innovation network.
Network view	How would you describe (PL/M/PSP) in a network? What do you consider your role? Does it happen that all three actors sit around the table and discuss? What are your thoughts on the cooperation of all three actors?	By asking this question to all our interviewees, we wanted to understand what role they think they have in the network of packaging innovation, for example a driver, a follower, etc This question was also asked to our interviewees (all actors) in order to detarmain if a tighter collaboration was desired and if so what that would look like and why

Appendix 3 - Consent Form

Consent form

I hereby consent to the audio recording of my voice solely for the purpose of manual transcription. I understand that no automated or AI-based transcription tools will be used, and that all recordings will be permanently deleted upon completion of the transcription process. The transcriptions will be stored and only available to the researchers, unless they need to be shared with our university supervisor and examiner.

I understand that I will be anonymous in the transcription as well as the final thesis.

Participation is voluntary and you may withdraw at any time before the thesis is submitted (June 2026).

To confirm your participation, please reply to the email stating that you have read and understood this consent form.

Thank you for your time and contribution to this research.

Appendix 4 - Overview of findings

	What was in the Litterature	Findings and What was not in the literature
PL (actor & role)	PL current strategy includes innovation, which aligns with Gielens et al. (2021), and their smart PL strategy as well as with other authors (Beckeman and Olsson, 2011; Abril and Martos-Partal, 2013; Grewal, 2018; Margulis, 2022) PLs have packaging specialists and designers have ongoing discussions with M about small packaging improvements, shows they do innovation levels 1 and 2 Simm & Trott (2014) PL has packaging specialists play a key role for radical packaging innovation by being in contact with PSP, aligns with recommendations from Simm & Trott (2014). This is a way to redirect resources, as mentioned by Håkansson and Snehota (1997) PL have resources such as marketing department, useful for innovation (Fuller, 2004) Even though PL has insights on buying behavior and consumers to identify consumer needs (Beckeman and Olsson, 2011; Gielens et al., 2021), this data does not seem to be essential in the radical packaging innovation process Contrasting to the literature PL is not as risk adverse as (Grewal, 2019) mentions since PL do not conduct heavy research when it comes to radical packaging innovation.	
M (actor & role)	Knowledge about market trends (Beckeman and Olsson, 2013) M is the one investing in packaging machines (Fuller, 2004)	
PSP (actor & role)	Knowledge about packaging material, aligns with (Fuller, 2004) PSP is an actor for radical packaging innovation aligns with Simm & Trott (2014) Facilities to develop new products, aligns with (Fuller, 2004)	Adapts their actors for relationship with PL, aligns with Håkansson and Snehota (1997) saying that companies can adapt their actors to others. PSP strategic role in radical innovation means that central to the network

	We saw that PSP wants their innovation to bring value to the whole chain (incl. M, PL, and end-consumer). This aligns with Beckeman and Olsson (2011).	
M - PL relationship	Manufacturers do in fact care about innovation and have collaborated with PL. Which contrasts with previous literature that argued that manufacturers are not interested (Beckeman et al., 2013). However, we argue that they are still not considered a driver and have a medium interest. This may be due to perceived cost of such radical innovation, in line with Simms and Trott (2014). the manufacturer must protect its interests by assessing whether other private-labels are likely to adopt the new radical packaging solution before committing to investment in new machinery. This aligns with (Bombaywala & Riandita, 2015) who mentions their cautiousness in terms of investing in packaging innovation. The collaboration between manufacturers and private labels when it comes to radial packaging innovation still seems to be complicated even though it may not be as challenging as previous studies have found (Simms & Trott's, 2014; Jiménez-Guerrero et. al., 2015). M and PL cooperated on a repackage product in a new market thanks to manufacturer knowledge about product and Pl about end-consumer. This is in line with (Beckeman and Olsson, 2011). Complex relationship with price as key Beacom and Bergin, 2024). Coopetition Beckeman et al. (2013) Contrast to Beckeman and Olsson (2011) said that PL does not want a long term relationship, we found that PL would prefer it but because of low-margins and price strategy it is not always possible When investing in a new machine, the manufacturer carries the financial aspect. This agrees with Fuller (2004). M adapts to what PL asks if other PL are also asking for it + PL does not want to push too much bc they are not the ones buying the machine. This contrasts with literature that stated that M are expected or pushed to innovate for PL (; Beckeman et al., 2013) M adapt to PL requirements which aligns with Fernie and Sparks (cited in Beckeman 2011) that retailers have the control over the manufacturer because of a buyer-supplier relationship	PL willing to help M with packaging knowledge PL does not want to push too much bc they are not the ones buying the machine

M - PSP relationship	PSP brings services and knowledge to M, contrasting with Beckeman and Olsson (2013) stated that PSP is missing consumer trends knowledge, and M should bring it to them.	PSP can give visibility to M which is both an opportunity and a risk
PSP - PL relationship	PSP and PL are interested in developing a relationship for radical packaging innovation, which confirms the signs of a relationship described by Beckeman et al., 2010; Beckeman and Olsson, 2011; Simms & Trott, 2014). This also aligns with Håkansson and Snehota (1997) who mention that a relationship should be two-sided PL have expressed their interest in having a stronger relationship with the PSP to support their desire to innovate which is in line with Beckeman and Olsson, (2011) PL have knowledge about packaging (packaging specialist) however they need PSPs resources since for radical packaging innovation a high level of technical knowledge is needed. In line with Simm & Trott (2014) idea of 3rd level packaging. PSP has contact with different departments in PL which aligns with Simm & Trott (2014) who mentioned that having the right point of contact is essential to innovate	PL-PSP early stage and will still evolve The multiple actors involved in this relationship on PL side, brings nuance to ARA by providing an example of a relationship which involves many different actors for one of the companies involved. Innovation center and food development center. These resources are currently being used mostly by manufacturers which is TPs current customers, but they can be beneficial for PL as well, which was brought up by few interviewees.
Triad / network	We found that PL thinks that M are not that interested in innovation, as pointed out by Beckeman and Olsson (2011) We found two paths that PSP can use to spread their innovation: one is through M to reach PL. The other way is through PL to M. This second path confirms Beckeman et al.'s (2010) their recommendation that PSP should inform PL directly. The ideal result of the second path is for PL to change their packaging requirements to the PSP portfolio, therefore pushing M to adapt the innovation. This goes in line with who pointed out to the power of PL in the supply chain. All actors insisted that the individual is important for the relationship, and emphasized trust. This is usually the case in the B2B relationship literature. For example Håkansson and Snehota (1997) emphasize the importance of trust.	Currently all three actors have expressed an interest in becoming closer with each other and potentially cooperate all three together There may not be one single driver of radical packaging innovation
Legislation	Legislation is one driver of radical packaging innovation, aligns with Fuller (2004) saying that legislation drives innovation in food products.	Upcoming packaging legislation leads to changes in PL. Affects relationship between PL and PSP Affect relationship between PL and M

Appendix 5 - Statement of AI use

Regarding AI use during the research, we used AI to help improve our text by searching for synonyms and help with ideas on how to improve writing. We did not use AI for transcription as mentioned in our method. We did not upload any data from our interviews into AI for ethical and security reasons.