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Caroline Bjørnseth and *Julie Sophie Eide Johannesen*

Summary

All the major Norwegian newspapers cover the Norwegian grocery industry almost daily. In the past, manufacturers and distributors wielded significant influence over assortment and pricing. However, retailers have more power today, than in recent years.

This study examines who is paying for the price war in the Norwegian grocery market. Price wars in the grocery market tend to erupt when demand is high. Especially during seasons including Christmas and Easter.

The emphasis of the research is on customers, however, the behavior of the four low-price chains Kiwi, Rema 1000, Extra, and Oda is additionally observed. To acquire a better understanding of the industry, method triangulation has been applied. First, secondary data analysis was implemented. A survey was distributed to consumers in order to acquire a better understanding of their purchasing patterns. Observations during the Easter price war, as well as an in-depth interview with an industry professional, were conducted. A cluster analysis, profile diagram, and store attributes analysis were performed on the survey data. The observations results were categorized utilizing a coding scheme, and the in-depth interview was text analyzed.

The study's main findings are that consumers are paying for the price war. Our findings show that prices fluctuate, making it difficult for customers to keep track. Furthermore, price is deemed important to customers. The industry claims that it is necessary to follow competitors on price adjustments in order to avoid losing customers. Additionally, the respondents can be divided into two consumer clusters based on different customer characteristics. Lastly, for the Norwegian grocery chains, the price war is a profile price battle and the perception of being the cheapest. The findings from our research contribute to a better understanding of Norwegian grocery consumers in general, as well as how current price wars affect them.

Table of Contents

List of Figures

List of Tables

1 Introduction

Pricing represents one of the most significant tools for management decision-making, marketing, and signaling (Kalyanaram & Winer, 2022). This is because prices can easily be adjusted (Heil & Helsen, 2001) and has a considerable impact on sales revenue (Selnes & Lanseng, 2015). This makes pricing policies a relevant research area in marketing. Price research has been done from strategic, behavioral, managerial, and economic perspectives with the means to gain knowledge on consumer responses (Kalyanaram & Winer, 2022). Price wars are a unique form of market competition that is characterized in the literature as fierce price competition in which companies try to undercut each other. Companies may incur losses, whereas customers might benefit from lower prices (Heil & Helsen, 2001). However, although there has been done research on the topic, there is still a lack of consistent conceptualization (Cardot et al., 2021) and it is thus necessary to further investigate how price wars emerge, their managerial implications, and the effects of price war on both the consumers and the competitive environment.

Heil and Helsen (2001) conducted research on how price wars emerge back in 2001. They identified four early warning signs for price wars. They consist of specific market conditions, firm characteristics, product attributes, and consumer behavior. Although they provided an extensive framework, Cardot et al. (2021) recently found that market practitioners nevertheless seem unsure about how price wars erupt and frequently blame the competitors for acting too aggressively. Simultaneously, the practitioners are adjusting their definitions in a way that pardons their own price strategy.

It is essential to understand why a price war occurs, which necessitates an examination of customers, companies, competitors, and other industry participants both inside and outside the industry. As a result, if a manger develops a rudimentary awareness of their customer's pricing sensitivity, they might be able to respond to a competitor's price drop without decreasing their own prices. Customers are frequently unaware of replacement items and their pricing, making it difficult to evaluate comparable products. Furthermore, different customer segments have varying levels of price sensitivity for certain products (Rao et al., 2000).

As for price war effects, price wars are frequently assumed to result in losses for the companies. Additionally, customers might benefit from lower prices, however, it can result in the establishment of unrealistic reference prices

(Heil & Helsen, 2001). Customers have different reference prices (Hamilton & Cherney, 2013), and if a product is priced lower than the consumers' reference price, the purchase is perceived as a gain (Kalyanaram & Wiener, 2022). The effects of a price war on consumer purchase behavior in the grocery retail market were investigated by van Heerde et al. (2008) in the Netherlands. Although they mostly observed adverse consequences, they also discovered that the discounters benefited from the price war. They conclude that further studies are needed to discover whether their findings are generalizable to other price war situations, markets, and countries. Additionally, Heil and Helsen (2001) state that it is still necessary to examine the overall effects of price wars.

The consensus is that price wars defeat profits and should be prevented (Bertin, 2014; Busse, 2002; van Heerde et al., 2008). There is a research gap in Norway regarding investigating pricing and price wars. Our research is inspired by what has been conducted in the Netherlands, and we will be investigating the Norwegian grocery market. Price wars are common in Norway during periods of high demand such as Christmas, Easter, and summer. Considering that low-price chains continue to participate in price wars, does this imply that being involved is not entirely unfavorable and may result in beneficial outcomes? Customers desire to purchase the items with the lowest prices (Heil & Helsen, 2001), and during a price war, certain products are sold at significantly lower prices than typical. Customers might believe that reduced prices solely result in gains. However, this might not be the case. Additionally, it would have been interesting examining all sides, including the suppliers, the grocery retail chains, and the customers. However, in this study, we utilize the customers' perspective to investigate how price wars and price adjustments impact them. This brought us to ask the following research question:

Who pays for the price wars?

Following, price and price wars are extensive topics. As stated, we will take the customers' perspective, however, we will include the low-price chains to answer the research questions and the following hypothesis. The study will concentrate on the three major low-price competitors: Kiwi, Rema 1000, and Extra. Simultaneously, we have opted to include Oda, an online grocery store that competes with the other chains to be the cheapest.

2 Conceptual background

This chapter describes the evolution of the Norwegian grocery market and emphasizes key developments over the past sixty years. The grocery industry has undergone significant transformations during these decades. It has evolved from a fragmented retail structure to three grocery retailers dominating turnover. Finally, a description of how price trackers operate, and the current competitive environment are explained.

2.1 The grocery market from 1960-2023

In the 1960s, wholesalers took a leading position in the Norwegian grocery market by investing in technological advances (such as self-service stores that paved the foundation for the establishment of profitable chains), mergers, and acquisitions. One of them, Joh.Johannson, developed the first nationwide grocery group in Norway, which eventually became a substantial element of NorgesGruppen. For a period, Joh.Johannson, NKL (consumer cooperative Coop), and the two private wholesale associations Køff (Kefas) and Løkengruppen were relatively equal in size (Bredal, 1996). Apart from Coop, the Norwegian grocery market was characterized by small retailers operating independently. The Norwegian grocery sector underwent a comprehensive change from 1985 to 1995. From the power of the producers, it evolved into a collection of umbrella organizations dominated by four grocery retail chains (Sørgard, 2003, p.177).

The breakthrough for grocery chain businesses occurred at the end of the 1970s. Stein-Erik Hagen is one of the two major innovators in the Norwegian grocery industry and launched the first Rimi store in Oslo in 1977 with the tagline "enklest er billigst" (simplest is the cheapest). Odd Reitan is the other innovator who established Rema 1000, which is one of the most successful business concepts in Norway after the war. Rimi 500 was a low-price concept where the goods were sold at a fixed low price without any additional offers. Reitan established the concept of Rema 1000 with low prices and a restricted product offering (Bredal, 1996). However, in 1992, the Swedish chain ICA acquired the Hagen group, which subsequently had a 45% stake (Bredal, 1996). In 1995, the consumer cooperative (Coop), the Hakon group (Rimi with several), NorgesGruppen, and the Reitan group had a 97% market share (Sørgard, 2003, p. 178). The market share from 1994-2004 is presented in appendix A.

The competition situation in the Norwegian retail market changed in 2015 when the Norwegian Competition Authority (Konkurransetilsynet) approved Coop's acquisition of Ica Norway. Coop undertook to sell 43 grocery stores to Bunnpris and 50 to NorgesGruppen. This was important to maintain the competition nationally, in the local districts, and in the interest of consumers. Weakened competition can lead to higher prices, narrow assortment, and service. The Norwegian Competition Authority concluded that the acquisition was justifiable and that it would be positive for the competition if Bunnpris and Coop strengthened their position in the market (Konkurransetilsynet, 2015). Reitan criticized the option agreement and that giving NorgesGruppen more market power would be destructive to competition in the grocery market (Kleppe et al., 2015). Appendix A provides an overview of the market share from 2014-2023 showing that with the sale of ICA to Coop, the market consists of three major chains. Additionally, a timeline of important events is also presented in appendix A.

2.2 Norwegian grocery retailing competitors

The Norwegian grocery industry is concentrated around three large umbrella chains as well as a few smaller ones consisting of NorgesGruppen, Coop Norway, Rema 1000, l.K. Lykke, and others. Additionally, the grocery stores can be classified into separate categories, featuring 68.5% being low-price chains, 21% being supermarkets, 5.8% being convenience stores, and 4.9% being hypermarkets. Coop and NorgesGruppen have stores that can be classified in all segments. REMA 1000 operates in the low-price market (Rekdal, 2022). Appendix A shows the different segment categories.

2.2.1 NorgesGruppen

NorgesGruppen is the market leader in the Norwegian grocery market, with a 44% market share in February 2023 (Molland, 2023a). They comprise chain concepts such as Kiwi, Meny, Spar, Joker, and the two high-end stores Jacobs, with approximately 1800 stores, and provide a combination of physical and online commerce. Furthermore, NorgesGruppen encompasses the national wholesale corporation ASKO, which supplies all of its stores (Norgesgruppen.no, n.d.).

2.2.2 Coop

Coop is Norway's second-largest retail company (Coop.no, n.d.-a) with a 29.2% market share in February 2023 (Molland, 2023a). Moreover, there are more than 1100 stores around the country, and they manufacture several of the products featured in the store (Coop.no, n.d.-b). Additionally, Coop Norway consists of Coop Mega, Obs, Coop Prix, Extra, Coop Marked, and Matkroken (Coop.no, n.d.-c).

2.2.3 Reitan Retail

Reitan Retail has operations in countries such as Norway, Sweden, Denmark, Finland, and Estonia in the retail, service trade, and mobility industries. Moreover, the portfolio includes Rema 1000, Narvesen, 7-Eleven, and Uno-X (Rema.no, n.d.-a). Rema 1000 is one of the leading low-price chains (Rema.no, n.d.-b), with a 23% market share in February 2023 (Molland, 2023a). Secondly, Rema 1000 is Norway's sole grocery retailer with franchising, meaning that each store is managed by a franchisee (Rema.no, n.d.-b).

2.2.4 I.K. Lykke

Bunnpris have approximately 250 stores and was established by I.K. Lykke (nettbutikk.bunnpris, n.d.). Additionally, Bunnpris is one of the smallest grocery retailers, with a 3.5% market share in February 2023 (Molland, 2023a), which has remained steady for the previous eight years. The majority of the items are supplied through NorgesGruppen's wholesaler ASKO (Rekdal, 2022).

2.2.5 Online purchase of groceries

The opportunity to purchase food online has increased in recent years, particularly during the pandemic. Grocery stores such as Meny, Rema 1000, and Coop, as well as Oda provide home delivery. Online grocery shopping is still regarded as a minor sales channel; however, it is increasing. This might result in more international competition (Wifstad et al., 2018). Oda is an online grocery store that competes with other low-price retailers such as Kiwi, Extra, and Rema 1000 (Oda.no, n.d.-a). In December, Oda won VGs matbørs' price comparison for Christmas with the lowest-priced shopping basket among the grocery chains (Oda.no, n.d.-b). However, shortly after receiving the prize, the company raised the pricing of thousands of products, bringing them closer to the price level of the supermarket chain Meny (Jordheim & Ro, 2022).

2.3 International comparison

The Norwegian grocery industry experiences stability with few store closures, as is the situation in other retail industries. In comparison with other European countries, Norway has more stores per inhabitant (Rekdal, 2022). Additionally, there is an increase in low-price stores accounting for 68.5% of the market in 2021. This represents a higher amount compared to the rest of Europe (Rekdal, 2022). Lastly, in comparison to the other Nordic nations, Norway's three operators are more evenly distributed in scale than the three largest in Sweden, Denmark, and Finland (Wifstad et al., 2018).

2.4 External competition

In comparison to the EU-members Sweden, Denmark, and Finland, competition in the grocery market in Norway stands out. Firstly, the Norwegian grocery industry lacks more minor participants and is concentrated around a few major players. Secondly, there is a lack of international players. Several corporations attempted to establish themselves in the Norwegian grocery market but withdrew owing to special Norwegian circumstances and a challenging competitive environment. The Swedish retail company ICA and the German Lidl are two chains that attempted to establish themselves in the Norwegian grocery market, but eventually left since the market was unprofitable for their concept because, among other reasons, they were unable to employ private labels. Additional factors addressed are the restricted chances for international competitors to use contractual arrangements they possess outside of Norway owing to the country's determination to protect Norwegian agriculture and industry. In contrast, NorgesGruppen, Rema 1000, and Coop operate in the Danish and Swedish grocery markets. As a result, this might contribute to raising the question of the peculiarity of the Norwegian grocery industry (Wifstad et al., 2018).

2.5 Import protection

To protect Norwegian production, it is established agricultural import protection (Regjeringen.no, 2020) that distinguishes Norway from the other Nordic countries (Gaasland, 2020). The Directorate of Agriculture is in charge of the regulation. The overarching goal is to facilitate it easier to import agricultural products as a complement to Norwegian production and to ensure a disposal basis. The highest customs duties are levied on Norwegian agricultural products such as meat and

dairy products (Landbruksdirektoratet, n.d.). In comparison to other European nations that have access to several suppliers through an integrated free trade zone, Norwegian retail chains have a significant proportion of domestic suppliers. This aids in explaining the pricing disparities between Norway and the EU (Gaasland, 2020).

Import protection is highlighted as one of the explanations for the Norwegian grocery market's lack of multinational participants (Wifstad et al., 2018). Similarly, it might be argued that it is unfavorable for foreign actors to establish operations in Norway if they cannot employ their own suppliers (Gaasland, 2020). Additional factors that might be examined include demographics, geography, strong Norwegian suppliers, and consumers' desire to purchase well-known brands (Wifstad et al., 2018).

2.6 Price trackers

The low-price chains operate with price guarantees, promise to remain the cheapest and match competitors' prices. Price trackers are utilized by the grocery chains to ensure that they always offer the lowest prices and to monitor the prices of competitors. The chains believe that the use of price trackers is necessary to maintain the promise to customers that they are offering the lowest prices (Moflag, 2013). Since the grocery market comprises few players (Wifstad et al., 2018), the low-price chains can readily observe each other and react quickly in the event of price discrepancies.

A price tracker scans competitors' shelf prices and can check multiple product lines in a short period of time. If lower prices are discovered at competitors, it takes a short time from the moment a discrepancy is detected until the new price appears on the store's shelf (Moflag, 2013). It is easy to compare prices between a large proportion of goods available at the chains. However, for certain products, variations in the assortment between chains, such as pack sizes and private labels will make the comparison more challenging (Oslo Economics, 2015).

According to the Norwegian Competition Authority, a market with few competitors and high barriers to entry might foster transparency, allowing firms to cooperate more readily to limit competition (Konkurransetilsynet, 2022). Representatives from the Norwegian grocery industry collaborated with Virke, the Consumer Ombudsman, and the Norwegian Chamber of Commerce's Service

Office for Market Law to develop an industry norm throughout 2009 and 2010. The standard entailed that the three major umbrella chains agreed that pricing comparisons of the competitors were permissible. It was accepted that the price trackers could work up to 20 hours each week collecting prices at each store (Moflag, 2013). The industry standard's purpose was to facilitate healthy competition whilst safeguarding customers' interests (NTB, 2020). However, the Norwegian Competition Authority concluded in December 2020 that the chains exploited pricing information from price trackers to coordinate prices, which might have contributed to restricting competition. As a result, the Competition Authority announced a fee against NorgesGruppen, Rema 1000, and Coop on suspicion of illegal pricing collusion (Konkurransetilsynet, 2020). NorgesGruppen decided to abandon the industry standard in November 2020, emphasizing that they disagreed that the norm might be damaging to competition (NTB, 2020). Coop and Rema quickly followed. Additionally, the Norwegian Competition Authority has not reached a conclusion on the matter (Konkurransetilsynet, 2022).

2.7 Competition situation in Norway

According to the Norwegian Competition Authority, NorgesGruppen obtains lower purchase prices than its competitors. Since the umbrella chains have different purchasing conditions, the requirements determining what will be an acceptable sale price for the customers are different. The Norwegian grocery stores are free to determine a pricing strategy for the total shopping basket of the customers. The price of individual products might be reliant on one another. An increase in the price of one product might cause the price of other products to rise as well. More knowledge about the competitiveness of grocery store chains raises customers' awareness of how they might use their purchasing power to pressure firms to compete harder. According to the Norwegian Competition Authority, insufficient competition exists since the grocery industry is concentrated, with high entry barriers, higher prices, and a lesser assortment than in other European countries. Furthermore, they believe that adjustments to import protection are needed to lower obstacles to entry, which are required for tougher competition (Konkurransetilsynet, 2022).

Price competition in the Norwegian grocery industry might be challenging. Because there are few competitors in the market, pricing collusion becomes more probable. The possibility of tacit collaboration amongst grocery store chains is

increased by high concentration, entrance obstacles, and more homogenous products. At the same time, the variety of items and prices offered by grocery store chains makes such collaboration challenging. Furthermore, the development of various competitors' and chains' market shares over time, low operating margins, fluctuating profitability, and continual price wars indicate that tacit collaboration is not existent in the Norwegian grocery market (Wifstad et al., 2018). According to Ingvaldsen (2020), price wars are in the very nature of discount chains. If two retail chains align their prices, customers will have no reason to choose one of them over the other. Because pricing collusion is illegal, the chains have little motive to trust one another. This is a situation neither of them wants to be in since it would result in a lesser profit or perhaps losses.

3 Literature review

The literature review starts with an introduction to price and relevant price theory. Following, it provides an overview of the price competition theory before examining the research on price wars. Then follows a review of the research conducted on private labels and national brands. Lastly, the literature on different consumer characteristics that affects price reactions is explored.

3.1 Price

The marketing mix consists of four elements: product, price, place, and promotion. These are known as the four Ps of marketing. For a company to be able to optimize its sales revenue and profits, these four marketing activities must be coordinated and adapted to its consumer segments. The focus of this study is price which can be defined as "what one sacrifice to acquire the product" (Silkoset, 2021, p. 16, own translation). That can be either money, time, or risk. In comparison to the other elements of the marketing mix, price offers distinct advantages in a competitive environment such as price wars. Specifically, price can be rapidly manipulated by introducing new pricing strategies to trade partners, retailers, or the sales force. Moreover, the price exhibits flexibility as prices can be easily adjusted either upwards or downwards. This adaptability extends to the possibility of making price changes in different consumer segments or even individual stores. From a managerial perspective, manipulation of the price variable yields immediate and easily measurable results, for example in short-term changes in sales. In contrast, the other marketing mix variables, such as

advertising aimed at creating customer awareness or brand loyalty, often entail more challenging evaluation processes and require more time and effort for notable effects to be seen (Heil & Helsen, 2001; Kalra et al., 1998). Considering the factors described above, finding the optimal price for a product or service is probably one of the most important and difficult areas within marketing management.

3.1.1 Price elasticity

If a firm can increase its prices without losing sales volume, it can gain considerable growth in profits. However, in most industries, the price affects the demand in such a way that the demand decrease when the prices increase and opposite. In the grocery market, this dynamic implies that too high prices can result in customers switching to competing grocery stores and in turn, changing their shopping habits. On the other hand, too low prices are ultimately not sustainable in terms of sustainable management. The effect of changes in price on sales volume is known as price elasticity. This elasticity is influenced by several factors: (1) perceived availability of relevant substitutes, (2) share of total budget used in the product category, (3) to what degree the product is a necessity, (4) whether it is a short-term or long-term perspective on the purchase, (5) whether the price changes are permanent, and lastly (6) the customers reference price and tolerance zone (Selnes & Lanseng, 2015, p. 127-132).

Price elasticity is influenced by consumers' perception of substitute availability, leading them to opt for the most affordable product when they perceive the alternative products to be equally attractive and accessible. This implies that the price elasticity is high and is an important factor in areas with greater grocery store density (Selnes & Lanseng, 2015, p. 127-132). If the different grocery retailers are perceived as equal, the consumers are more prone to switching stores, and it is thus necessary for the grocery chains to be differentiated from the competitors to decrease the price elasticity. However, price elasticity does not only affect the switching of stores. It also relates to the switching of products. In grocery stores, there are often several alternatives of products available in every category, meaning that relevant substitutes can be easily accessible. The change in demand for one product related to changes in the price of another related product is known as cross-price elasticity (Auer & Papies, 2020). Recent research has found that there is a positive cross-price elasticity for

substitute products and that a larger number of products within a category entails higher cross-price elasticity. However, if there is a large degree of differentiation between the products in the category, the cross-price elasticity decrease (Auer & Papies, 2020; Sethuraman et al., 1999).

Auer and Papies (2020) recently concluded that the cross-price elasticity is affected by brand ownership. Consumers are less price sensitive to national brands compared to private labels. It was found that when there is a price change to a national brand, the demand for competing brands, both national brands and private labels, is greatly affected. On the other hand, price changes to private labels had less effect on the demand for competing brands. Their results are consistent with previous research (Aggarwal & Cha, 1998; Sethuraman et al., 1999).

Product category also influences the cross-price elasticity. Products can be distinguished between durables, groceries with low stockpiling ability, and groceries with high stockpiling ability. Products that can easily be stored by the consumers have a higher cross-price elasticity compared to products that are not easily stored, and the consumers are thus more likely to switch brands and act on promotions. For groceries with low stockpiling abilities, the consumers are more loyal and less prone to switching brands and the price elasticity can be considered low (Auer & Papies, 2020).

3.1.2 Price competition

Oligopolies are markets populated by only a few firms, where the action of one affects the market environment for all firms. The framework for analysis of strategic interactions is known as game theory whereas price competition is such a game. In oligopolies, all participants are aware that their actions influence others, and this is crucial when business actions like price are determined (Pepall et al., 2014, p. 213-214). According to the research, game theoretical models provide key insights into price wars, such as fluctuations in demand or worsening financial conditions (Heil & Helsen, 2001). Nagle and Müller (2017) describe price competition as a negative-sum game. As opposed to positive-sum games, negative-sum games entail costs for all players involved, including the winner. However, competing in price is rarely the most effective way of gaining market share, especially if a firm is competing on price alone. Managers should rather focus on positive-sum games such as innovation, customer centricity, better benefits communication, or increasing the efficiency of operations. These actions

create a long-term source of income if successful and are a more financially sustainable solution than solely cutting prices (Nagle & Müller, 2017).

The Norwegian grocery market can be classified as an oligopolistic market since it comprises three major and one small umbrella chain. Additionally, an online grocery store. The other competitors can observe the decisions, reactions, and actions. Price competition is defined as Bertrand competition in the literature, whereas quantity competition is classified as Cournot (Tremblay & Tremblay, 2019). The Bertrand model will be the primary focus given that Norwegian grocery stores compete on pricing (Pepall et al., 2014, p. 215). It can be observed in the Norwegian grocery industry that the low-price chains frequently adjust their prices either higher or lower in response to price changes by competitors.

Previous research defines the Bertrand competition as a situation where competitors produce identical products at a constant marginal cost (Tremblay & Tremblay, 2019). The individual operator anticipates what price competitors will select and bases the pricing on that. As prolonged as the price is higher than the marginal cost, one or both firms will regret their action when they observe the rival's price choice, and there will be no Nash equilibrium (Sørgard, 2003, p. 63). In terms of the Norwegian grocery chains, it might be discussed whether they are an oligopoly with homogenous or distinct items. With the low-price chains as the primary focus, they compete in the same market segment and have homogeneity in a number of product groups. At the same time, they are differentiating themselves from the competitors with such distinct locations and the offerings of private labels.

Given the intense level of pricing competition, businesses possess a strong incentive to differentiate their products (Pepall et al., 2014, p. 261). Then, a company can increase its pricing without losing all sales to competitors (Tremblay & Tremblay, 2019). The Norwegian grocery chains have different supplier agreements, provide different member benefits, and offer private labels. Additionally, the low-price chains differentiate themselves through the use of color, notably Kiwi representing green, Rema 1000 being blue, Extra featuring red, and Oda representing yellow. Although some customers perceive the low-price chains Kiwi, Rema 1000, Extra, and Oda as similar, the Bertrand Hoteling spatial model of product differentiation might best describe the price competition in the Norwegian grocery market.

The Bertrand Hoteling model uses geographic locations to explain

different versions of the same product. When distinguishing, grocery chains can charge higher prices than the marginal cost. However, the model is unable to generate effective marginal cost pricing. The outcome is determined by the customers, and the more value that the average consumer establishes on obtaining the favored products, the higher the prices will increase beyond the marginal cost (Pepall et al., 2014, p. 250-256). Differentiation can provide opportunities for generating customer loyalty. In terms of brand loyalty and price cuts, customers might easily be enticed away from the products they already consume. However, price cuts might become ineffectual if customers are loyal to their brand (Heil & Helsen, 2001). This indicates that regardless of whether the firm raises its product's price above the price of the competitors, it will not lose all sales (Sørgard, 2003, p. 67-68).

3.1.3 Price war

The term price war is frequently used to describe aggressive price competition in previous research (Krämer et al., 2016). Assael (1990) characterized price wars as competing firms struggling to undercut each other's prices (Heil & Helsen, 2001; Krämer et al., 2016; van Heerde et al., 2008). Urbany and Dickson (1991) describe it as a scenario where one firm attempt to gain market share utilizing a price cut leading to a "price-cutting momentum" which is defined as a downward price pressure that drives the competitors to follow the initiator. Busse (2002, p. 299) declares that a "price war is a period in which the firms in an industry or market set prices that are significantly below the usually prevailing prices" and that it usually involves a strategy change for the players in an oligopoly. Unlike intense price competition, price wars cause "market death" and are ultimately not sustainable (Schunk, 1999, cited in Heil & Helsen, 2001; Krämer et al., 2016; van Heerde et al., 2008).

Although many researchers have attempted, these descriptions fail to give a clear differentiation between price competition and price wars. Heil and Helsen (2001) proposed seven conditions required for price competition to be identified as a price war: (1) the strategic actions are competitor focused rather than consumer-centric, (2) the pricing interactions are undesirable for all other players, (3) the price war was unintended by the initiator, (4) the competitive interaction is violating industry norms, (5) the price interactions happens more frequently than usual, (6) the prices are decreasing, and (7) the pricing interaction is not

sustainable. However, neither did this proposed description give a clear differentiation to price competition. As argued by Krämer et al. (2016), price-matching plays a crucial role in oligopolistic markets. Hence, condition number 1 does not adequately identify a price war. Consequently, they offered a new definition explaining price war as a "scenario, when (1) market players try to win market share by utilizing aggressive pricing considering potential losses in short term, (2) prices are undercut to fall below the level of industry profitability and (3) actions are driven by suppliers rather than consumers" (Krämer et al., 2016, p. 3). Despite the work put into creating a definition of price wars, Cardot et al. (2021) found that there still is a lack of consistent conceptualization. Through their interviews with 25 market practitioners, neither proposed equal definitions of price wars. However, there is an agreement that a key indicator for price wars is back and forth of lowering prices between competitors. This is consistent with the previous literature discussed above.

The academic literature on the topic can be divided into three research topics. The first topic is on noncooperative game theory and more specifically the Bertrand model which is described above. It describes the mechanisms after a price war is triggered by one firm that attempts to gain customers by lowering its prices. When noticed by the competitors, they follow up by cutting their prices, and eventually, all players will be charging for non-profit prices (Heil & Helsen, 2001; Pepall et al., 2014, ch. 9-10). As previously assessed, pricing decisions should be taken with consideration to both the customers and the competitors (Selnes & Lanseng, 2015, p. 132-133). According to Heil & Helsen (2001), when pricing decisions are made solely considering competitors, it might be a sign of a price war emerging. However, there have not been any studies examining the connection between pricing orientations and price war propensity. It is thus necessary with more research on this topic (Cardot et al., 2021).

The second topic focuses on managerial implications and the connection between firm strategy and price wars. This literature covers how price wars typically begin and what responses a player can make in a price war and how to end them. A price war emerges when someone is willing to cut their prices to gain market share (Rao et al., 2000) which implies that starting a price war is a conscious action. However, many price wars start with an accident (Krämer et al., 2016; Nagle & Müller, 2017; Silkoset, 2021, p. 118-119). Research by Bertini (2014) shows that most managers believe that it was the competitor who initiated

the price war. This is supported by Nagle and Müller (2017) and Cardot et al. (2021), who argue that price wars often start without any of the competitors intending on it. If a firm cut its prices and is unclear in its communication, it can be misinterpreted by its competitors. If the managers at the competing firms respond thoughtlessly and aggressively, it can result in a price war (Silkoset, 2021, p. 119).

Recent research by Cardot et al. (2021) confirms that managers have an unfavorable opinion about price wars and seek to avoid them, whereas the blame is often given to the aggressive pricing strategies of competitors. They also found that most of the managers alternate their definitions so that their current pricing strategy and competition situation cannot be categorized as a price war (Cardot et al., 2021). Previous research also provides suggestions on how to react to a price war and how competitors should act to stop the war before it starts (Rao et al., 2000).

The last topic covers price war effects. Researchers agree that price wars typically appear to be profitable in the short run, but that there are rarely any benefits in the long run. Some long-term consequences are undermining the market value, destruction of profitability, and loss in margins, innovations, and customer equity. In the worst-case scenarios, some players face bankruptcy (Heil & Helsen, 2001; Nagle & Müller, 2017). The study by van Heerde et al. (2008) explores the short- and long-run effects of price wars on consumer purchase behavior and price perception. Specifically, they investigated how a price war in the Dutch grocery retail market affected store visits, spending, price sensitivity, and price image by comparing data from pre, during, and post-price war.

Ultimately, van Heerde et al. (2008) found that in the short run, a price war increases spending. However, in the long run, spending per visit dropped, consumers' price sensitivity increased, and they turned more aware of the stores' price image. This was favorable for the price war initiator and the chains considered "hard discounters". The initiator was successful in their mission to reverse its market share decrease. The biggest losers in this market were the mid-level and high-end grocery chains that suffered from heightened price image awareness. Despite these findings, the long-lasting price war in the Norwegian grocery market rages on.

Companies incur losses in terms of profitability, customer equity, and ability to innovate as a result of a price war (Heil & Helsen, 2001). During a price

war, due to the low price, a lot of products are nearly free. Customers experience empty store shelves and proceed to the competitor. Lower prices benefit consumers, nevertheless, they may establish unrealistic reference prices (Heil & Helsen, 2001). Because the store relies on customers, it might be vital to follow the other retailers when prices change. Hence, price fluctuations influence consumers.

H1: Price changes have an effect on Norwegian grocery consumers during a price war

3.2 Private labels and national brands

Private labels, also referred to as private brands or store brands (Wu et al., 2021) have a significant role in grocery retailing (Keller et al., 2016). According to industry experts and academic researchers, private labels are here to stay and will continue to rise (Gielens et al., 2021). Private labels are brands created by retailers (Bao et al., 2011) and produced by conventional manufacturers, but the grocery chain inserts its own private label on the product. They are only available through the retailer that possesses the private label (Sørgard, 2003, p. 179). Grocery chains gain insight into the cost of producing items through private labels. This knowledge can be utilized in supplier negotiations to reduce the purchasing price (Bergès-Sennou et al., 2007). National brands are developed by manufacturers (Bao et al., 2011). If a company possesses a strong national brand, the profitability of introducing a competing, private label is higher for the retailer than for other manufacturers of national brands. Private label introduction can steal market share from a strong national brand, and the advantages of increased competition will be transferred to the one who launches the brand, in this instance the retailer (Sørgard, 2003, p. 179-194). Private labels are considered a possible competitor by national brand manufacturers, a profit center by retailers, and a cost-effective option by consumer advocates (Goldsmith et al., 2010).

National brands traditionally dominated the Norwegian grocery industry. However, the introduction of private labels was one of the trends in the market in the late 1980s (Sørgard, 2003, p. 179-194). Gabrielsen et al. (2001) examined empirically the influence of private label introduction on the prices of competing national brands in the Norwegian grocery sector. They discovered that private label entrance has a more significant impact on highly distributed and ranked national brands than on less dispersed and ranked products.

Sotgiu and Gielens (2015) investigated the effects of a price war on brands and suppliers. Which brands to include in a price war are not selected randomly. The brands and pricing are chosen with the objective of optimizing category and store performance. Following a price war, volume and revenue sales at the individual brand level are minimal. This indicates that increased volume sales barely compensate for price decreases. If the retailer does not raise their prices in the aftermath, they might benefit from a price war. Additionally, the best scenario for brands is when retailers engage in a price war and instantly lower the prices. Brands that are not included in the price war, might benefit afterward by being perceived as the less-expensive alternative by the consumers. Additionally, in a price war, national brands profit less in terms of volume sales whereas private labels benefit more in terms of revenue. As a result, retailers may utilize private labels and national brands strategically in a price war to increase their private labels' strategic position compared to national brands (Sotgiu & Gielens, 2015).

Consumers' utilization of price as a quality indication has been thoroughly documented by researchers (Boyle et al., 2018). Abril and Rodriguez-Cánovas (2016), who studied marketing mix effects on private label equity creation discovered that the perceived price of the private label is an essential element for its success because customers desire affordable prices. Price is an essential instrument for providing an alternative to national brand positioning. With an emphasis on durable products, Boyle et al. (2018) discovered that the overall price for national brands was higher than for private labels. The majority of private labels have a lower perceived quality than the comparable national brand (Gabrielsen & Sørgard, 2007) and such products are often packaged in a simple manner (Gielens et al., 2021). However, concrete evidence of a causal relationship is lacking, and prior studies have revealed a minimal correlation between price and quality (Boyle et al., 2018; Richardson et al., 1994). According to Gielens et al. (2021), despite the lower price, customers' perception of private label quality has improved.

Cuneo et al. (2019) classified private label and national brand purchasers into four distinct consumer segments based on motivation and brand-choosing behavior. The first group is the price-driven purchasers who mainly buy private labels and are price sensitive. The image reflectors primarily select higher quality and prefer to avoid risk. Brand category discerners are willing to spend more in some categories, whereas are more price sensitive in others. Lastly, smart

shoppers prefer high-quality items but are also price-sensitive and risk-averse (Cuneo et al., 2019).

According to Gabrielsen and Sørgård (2007), loyal customers will never contemplate purchasing a private label whereas switching customers might consider doing so if the price difference is substantial. Committed customers suffer as a result of a higher price on the national brand, whilst switching customers gain when offered a cheaper private label. Grocery chains may benefit from both price-sensitive and non-price-sensitive customers by offering private labels at a lesser quality and raising the price of national brands (Gabrielsen et al., 2013). Previous research discovered that premium private labels are being added to standard private labels to attract consumers with various price and quality sensitivity (Gielens et al., 2021). Additionally, private label products are primarily purchased by price-conscious consumers (Bonfrer & Chintagunta, 2004; Wu et al., 2021).

Consumers who prefer private labels believe there are advantageous buying possibilities accessible in the marketplace and make fewer impulsive choices. Consumers who are deal-prone might be motivated to see transaction value and exhibit the same characteristics as consumers who select private label items. Additionally, consumers that hold a favorable attitude toward private label goods perceive themselves to be "smart" shoppers, and they are more inclined to search for such products regardless of whether they are located in less prominent areas of the store (Burton et al., 1998). Reference pricing, including the amount purchased, perceived savings, and transaction price, have a constant and considerable influence on consumer choice demand (Kalyanaram & Winer, 2022).

3.3 Consumer behavior

3.3.1 Reference price

The price elasticity is influenced by customers' reference price and tolerance zone. Reference prices can be identified as numerical estimates or price ranges for a specific product or a set of products and are often expressed in terms of currency (Hamilton & Chernev, 2013). When a consumer compares a price with a reference price, the price will be perceived as high, low, or equal to the reference price. Products in a category that are priced higher than the particular reference price are perceived as losses. On the other hand, products that are lower priced than the

reference price are perceived as gains. Consumers react more strongly to losses than to gains, meaning that a loss has a larger negative impact than a gain has a positive impact (Kalyanaram & Wiener, 2022). This makes it important for the grocery chains to price their products close to the customers' reference price or have options priced lower than the reference price such as private label, in order not to lose customers to the competitors.

3.3.2 Tolerance zone

The tolerance zone, or the latitude of price acceptance, is the perceived normal price variations around the reference price. When the prices are within the tolerance zone, the price elasticity is approximately equal to zero. However, if prices increase outside the tolerance zone, the demand becomes elastic (Kalyanaram & Wiener, 2022; Selnes & Lanseng, 2015, p. 131). A price below the tolerance zone creates attention and leads to a more active assessment by the consumers.

Reference prices and tolerance zones are affected by several factors. One of them is when grocery chains refer to exceptionally high "ordinary" prices for a product during a campaign. They can also use prices that end with 9, such as 19.90 NOK instead of 20 NOK as products often are perceived as less expensive with such pricing. Another approach is to offer several options with different prices within one product category. Consumers tend to use the highest category price as a reference, hence being insensitive to price changes within the range of cheaper alternatives (Selnes & Lanseng, 2015, p. 132). This implies that the grocery chains can price for instance a national brand higher for their private label to be perceived as a good purchase while they freely can change the prices.

3.3.3 Price image

Price image can be defined as the general perception that a consumer holds regarding the overall pricing level of a retailer. Graciola et al. (2018, p. 202) define price image as "a fundamental marketing phenomenon, with antecedents and consequences that influence consumer decision behavior". The term is different from reference prices and price perception as it is an abstract term entailing the entire store. Price perception can be defined as a consumer's impression of a specific price or a set of prices. For example, a customer's perception is that milk, in general, is relatively inexpensive, or that almond milk is more expensive than cow milk (Hamilton & Chernev, 2013). Price image, on the

other hand, can be viewed as a customer's perception that grocery discounters have lower priced groceries than other grocery chains. Price image is influenced by all elements of the marketing mix, including factors like the location of the store and store interior (Graciola et al., 2018; Hamilton & Chernev, 2013). Price image influences a consumer's choice of which retailer to visit, whether to make a purchase from that store, and the number of items they purchase (Hamilton & Chernev, 2013).

Price image is suggested to influence a consumer's price evaluation in two ways. (1) It can make consumers evaluate single prices consistently with their overall price image meaning that the same price can be perceived in different ways dependent on the price image of the store the price is encountered (Nyström et al., 1975). (2) It can also or instead make the consumers adjust their reference price according to the price image of the store they are shopping at (Berkowitz & Walton, 1980).

Price image not only affects how consumers evaluate prices but also influences consumer behavior in terms of deciding where to shop. Previous studies have revealed that consumers who are more price sensitive or price conscious tend to select the store they perceive as having the lowest price image (Alba & Marmorstein, 1987; Hamilton & Chernev, 2013). Price wars make consumers more price image sensitive and more inclined to utilize price image as a decisive factor when determining where to shop (van Heerde et al., 2008). Hence, price image is an important variable to measure regarding price wars. Price image can be measured directly by asking consumers to choose the lowest priced store (Alba & Marmorstein, 1987).

3.3.4 Price search propensity

Some consumers mostly stay loyal to their preferred store whereas others search for the best prices and shift stores accordingly. Knowing the factors that influence the price search and which consumers partake is important for managers as it impacts the consumers' response to price promotions and consequently the profitability of the campaign. Additionally, it allows managers to create segments based on their profitability. Gauri et al. (2008) investigated the nature of consumer price search propensity and the factors that impact different types of price search. They distinguish between temporal- (frequency) and spatial (geographic width) price search. Their results suggest that geography and opportunity cost serve as

the most useful predictors of consumers' price search effectiveness, that is to what degree the consumers take advantage of price promotions. Opportunity cost is the value of the time spent undertaking price searches versus the benefits gained. With geography, they focus on the location of the consumer in conjunction with the location of the consumer's two closest stores (Gauri et al., 2008).

Their research showed that the smaller the distance between the stores, the more spatial price searches will occur. Moreover, they learned that the frequency of store visits and temporal price searches increases when the distance between a customer and a store is small. Furthermore, they found that an increase in the opportunity cost (the cost of using time and resources on price searches) has the biggest effect on reducing the probability of price searches happening (Gauri et al., 2008). Hence, if managers succeed to make the benefits gained from engaging in price searches minimal, then many consumers will refrain from engaging in price searches because the cost will be bigger than the gain. Consequently, Gauri et al. (2008) discovered that consumers who do not actively engage in price searches often capitalize on about fifty percent of the total potential savings they could have made from actively seeking out price promotions. Based on these findings, it is expected that there is a difference in price search propensity among Norwegian grocery consumers.

> H2: There is a difference in price search propensity between consumer clusters

3.3.5 Sales proneness

Sales proneness refers to an individual's inclination to purchase goods or services specifically when they are offered at discounted or sale prices (Lichtenstein et al., 1993; Moore et al., 2003). When a product is offered on sale, individuals who are sales-prone tend to view the price more favorably and generate more positive responses compared to if the same price was presented as the regular price (Monroe & Chapman, 1987). Sale proneness as a consumer characteristic reflects to which extent the consumer values price and price discounts and relies on these external cues when making purchase decisions (Yazdanparast & Kukar-Kinney, 2023). Highly sales prone consumers are less likely to make purchases of higher priced items (Lichtenstein et al., 1993). Based on the previous research, it is expected that there are differences in sales proneness among Norwegian grocery consumers.

H3: There is a difference in sales proneness between consumer clusters

3.3.6 Price sensitivity

Price sensitivity refers to "the way that customers perceive and respond to changes or differences in products' or services' prices" (Graciola et al., 2018, p. 204). If the price sensitivity is low, the prices can change more without reducing the sales volume compared to if the sensitivity is high (Silkoset, 2021, p. 32). Van Heerde et al. (2008) found that price wars increase consumer price sensitivity. Price sensitivity is thus an important characteristic to measure when investigating consumer responses to price changes and ultimately price wars. The level of price sensitivity can be a consumer characteristic. Some people are more sensitive to price changes than others and the price sensitivity can vary between different products and services. Furthermore, some consumers might be very price sensitive in a product category whereas others are not. It can also differ within a product through a combination of different properties or from one time of purchase to another. In categories with low price sensitivity, price is not a driver or obstacle for purchases (Silkoset, 2021, p. 81). In conclusion, it is expected that there are differences in the level of price sensitivity among Norwegian grocery consumers.

H4: There is a difference in price sensitivity between consumer clusters

3.3.7 Impulsiveness

Impulsiveness can be defined as a consumer's inclination to make spontaneous, reflexive, and/or abrupt purchases. Impulsive consumers are more likely to experience spontaneous purchase incentives. They give often less attention to shopping lists and are more receptive to sudden, unexpected purchase ideas. Hence, impulsive consumers tend to respond to their buying impulses more often. The likelihood of consumers engaging in impulse buying is presumed to be influenced by two factors: (1) their level of impulsive buying tendencies and, (2) their normative judgments that may either restrict or permit impulsive purchases. In theory, when a consumer with a general inclination toward impulsivity encounters an impulse buying incentive and next evaluates the purchase as acceptable, both their impulsive tendencies and normative influences align, increasing the probability of an impulsive purchase. However, if negative normative evaluations arise in a purchasing situation, the consumer's impulsive tendencies can be hindered, and the probability that even greatly impulsive buyers

act on their impulsive urges decreases. Normative factors can be time pressure, social visibility, and the consumers' economic position at the time of the incentive. For instance, if the impulsive purchase is perceived to be considered inappropriate, that is evaluated as negative, it is unlikely that a purchase takes place (Rook & Fisher, 1995). Based on the research, it is expected that there are differences in the level of impulsiveness among Norwegian grocery consumers.

H5: There is a difference in impulsiveness between consumer clusters

3.3.8 Skepticism towards store promotion

In a competitive market, advertising managers must capture the interest of customers through advertisements and sales promotion (Sama, 2019). Customers might be offended by limits that lead to misinformation (Kukar-Kinney et al., 2011: Sinha et al., 1999). Previous promotion research has emphasized the effort required by the customer to obtain the offer. Customers feel violated if they have to exert significant effort to find the advertised price (Kalyanaram & Winer, 2022). Xia et al. (2010) examined the relationship between customers' perceptions of pricing fairness and promotion fairness. The researchers emphasized that the final price in the setting of price promotion is determined by the effort of customers and retailers. Effort is regarded as an input, and price promotion offers occasionally impose constraints or requirements on what purchasers are required to do to receive the advertised price. If customers fulfill the requirements, they believe they are entitled to the discounted price. Therefore, if consumers obtain the advertised price, the effort spent throughout the search and purchasing process is evaluated favorably. However, if they do not, there is an unequal input and output ratio, and the effort invested is considered unfair (Xia et al., 2010).

Different consumers may pay different prices for nearly the same goods, giving rise to allegations of unfair advertising. If customers believe that the retailer's motivation for the promotion is unfavorable with the objective of profiting from its customers, the campaign is likely to be perceived as unfair (Kukar-Kinney et al., 2011). The more customers consider the advertising method unfair, the more they perceive the price paid as unfair. The researchers found that the effort invested by the customer might have an adverse impact on the retailers' motivation and that they will encounter unfavorable consumer reactions (Xia et al., 2010). Hence, when customers invest varying amounts of effort in searching for promotions and consequently encounter distinct experiences, there might be

differences in customers' skepticism regarding store promotion. As a result, it is expected that there are differences between Norwegian grocery consumers.

> H6: There is a difference in skepticism towards store promotion between consumer clusters

4 Research methodology

This chapter will provide an overview of the data gathering process. Exploratory research was conducted to gain an understanding of price wars in the Norwegian grocery market. The main objective of exploratory research is to explore something to gain knowledge and understanding of the area of research (Malhotra, 2020, p. 94-103). First, an explanation of the secondary data collection will be provided. The primary data collection will next be described, beginning with the development of the questionnaire, and providing an explanation of the sample and data gathering. Secondly, a description of how observation studies were utilized is provided. Finally, the process of developing and carrying out an in-depth interview will be elaborated.

4.1 Secondary data

Secondary data was the first methodology utilized in this study. The main characteristic of secondary data is that it has already been collected for other purposes and can be gathered both effectively and at a low cost. Thus, the main advantages of this type of data are that they are relatively inexpensive, easily available, and quickly acquired, compared to primary data. Conversely, it is important to have in mind that the data is collected for different purposes and thus the objectives or methods used can be inappropriate for the current research (Gripsrud et al., 2017, p. 69; Malhotra, 2020, p. 118-121). Two types of secondary data were collected: academic literature and research and standardized studies.

The academic literature and research on price wars, consumer behavior, and national brands versus private labels were thoroughly investigated. The data was reviewed to get a deep understanding of the subject and the findings are summarized in the literature review above. The publications were retrieved via Web of Science and Oria. To ensure reliable and valid information, we mainly used published books, and academic research from level 1 and level 2 journals.

Standardized studies are generally carried out by professional analysis agencies. We utilized two types of studies: two syndicated panel surveys conducted by Norstat for Aller Media and Schibsted, and one market report by NielsenIQ. Syndicated services like Norstat are firms that collect and sell data fitted to their customers' particular needs. Panel data is data that is collected from the same group of respondents twice or more (Gripsrud et al., 2017, p. 79; Malhotra, 2020, p. 130-131). The survey reports were obtained to acquire knowledge and gain an understanding of the consumers' general shopping habits, drivers, and their future focus and habits in terms of grocery shopping. Additionally, the annual market report Dagligvarerapporten 2022 by NielsenIQ was obtained. The report offers a thorough investigation of the Norwegian grocery market, and it provides answers to how consumers evaluate the Norwegian grocery chains, in addition to trends and developments from 2013 to 2022. The reliability and validity of the data obtained were assessed. The knowledge obtained from the secondary data worked as the foundation for the subsequent primary data collection.

4.2 Primary data

After the secondary data sources were carefully reviewed, we proceeded with the primary data collection. In this part, we created a framework to statistically test the hypotheses that were developed during the secondary data collection. Our primary data collection consisted of three separate methods: questionnaire, observations, and in-depth interview.

4.2.1 Questionnaire

The quantitative research in this study was conducted through an online self-administrated questionnaire. The main advantages of online surveys and sampling are the convenience for both respondents and researchers, and it is fast and inexpensive. However, it is necessary to keep in mind the disadvantages of the method. First, representativeness might be an issue in terms of differences in internet usage capabilities among households or age groups. Furthermore, self-selection bias is necessary to consider as the participants themselves decide whether to respond or not, and thus there might be differences between the two groups (Malhotra, 2020, p. 376). Another disadvantage is that the questionnaire is self-administrated which entails two main weaknesses. First, there is the lack of control over the data collection environment, which can cause the respondents to

be inattentive or less involved than desired. Secondly, there is the lack of sample control, which implies that the respondent could get influenced by other household members or similar during their participation (Malhotra, 2020, p. 204-207). Despite the disadvantages, an online questionnaire was considered acceptable for this research given the limited time and resources.

The questionnaire was used to gain an understanding of how the price war in the Norwegian grocery market affects consumers' shopping behavior. To investigate this, the level of price search propensity, sales proneness, price sensitivity, impulsiveness, skepticism toward store promotions, and price image was measured. In addition, loyalty among the population was explored. Lastly, their thoughts on national brands and private labels were collected as well as the most important factors when choosing a grocery store. A questionnaire is a set of pre-made questions that are formed to obtain information about a specific topic from a set of respondents (Malhotra, 2020, p. 319). The questionnaire was structured, meaning that the questions were prepared and asked in a prearranged order with most questions having fixed alternatives (Malhotra, 2020, p. 193).

4.2.1.1 Privacy and ethical considerations

Before starting the questionnaire, the respondents were notified that their participation was voluntary, that the survey was conducted anonymously, and that their responses were to be treated with confidentiality. Further, they were asked whether they wished to participate and to give consent for the collected data to be used in the master's thesis. If they did not consent, the questionnaire was terminated. The data collected has only been available to those responsible for the survey. Anonymity was ensured by distributing the same link to all participants, turning off the collection of IP addresses, and not asking for information that can identify the respondents. This is in line with the internal BI guidelines for student assignments (BI, 2021).

4.2.1.2 Scale development

After the introduction, the questionnaire proceeded to measure consumer perceptions of private labels versus national brands, preferable store attributes, seven characteristics variables (temporal- and spatial price search propensity, sales proneness, price sensitivity, impulsiveness, sales skepticism, price image), and lastly the preference, usage, and perception of grocery stores. Demographic variables were collected for the purpose of cluster analysis and gathered last.

The scales used in the questionnaire are based on existing scales that are modified to fit the context of this research. The final scales in our questionnaire consisted of three items each. For the variable constructs that consisted of more than three items, the items with the best factor loadings were used in the scale development process. Wherever factor loadings were not available, we continued with the items we perceived as the most fitting and interesting for our research. All statements were translated from English to Norwegian and the language was modified to fit our study. Appendix B contains the comprehensive list of all scales utilized in our research, along with their respective sources.

To measure consumers' temporal and spatial price search propensity, two scales developed by Gauri et al. (2008) were modified. The original scales consist of five items each. The temporal price search propensity scale has a Cronbach's alpha of .82. For our modified scale, item 2 (*"There are times when I delay my shopping trip to wait for a better price deal"*), 3 (*"Although planned before making a shopping trip, I often do not buy some items if I think they will be on better deal shortly"*), and 5 (*"To get the best price deals for my groceries I often buy the items I need over 2 or 3 trips"*) was selected. The spatial price search propensity scale has a Cronbach's alpha of .89. From this scale, item 1 (*"I often compare the prices of two or more grocery stores"*), 3 (*"I regularly shop the price specials at one store and then the price specials at another store"*), and 5 (*"To get the best price deals for my groceries I often shop at 2 or 3 different stores"*) was selected. The items from both scales were then carefully translated into Norwegian in order to preserve the meaning of each item.

Three items from the scale developed by Lichtenstein et al. (1993) were used to evaluate sales proneness. The original scale consists of five items and has a Cronbach's alpha between .78 and .90. Item 1 (*"If a product is on sale, that can be a reason for me to buy it"*), 3 (*"I have favorite brands, but most of the time I buy the brand that's on sale"*), and 4 (*"I am more likely to buy brands that are on sale"*) was selected and translated.

Price sensitivity was measured using a modification of the scale by Wakefield and Inman (2003). The original scale has Cronbach's alpha between .86 and .89. It consists of three items: (1) *"I'm willing to make an effort to find a low price for ___."*, (2) *"I will change what I had planned to buy in order to take advantage of a lower price for ___."*, and (3) *"I am sensitive to differences in prices of ___."*. The words grocery stores or chains were added to fit the items to

the context before being translated.

For impulsiveness, the scale by Badgaivan et al. (2016) was modified. It consists of eight items, whereas item 4 (*"I often buy without thinking"*), 5 (*"I sometimes buy things because I like buying things, rather than because I need them"*), and 6 (*"I buy what I like without thinking about consequences"*) were adapted and modified for the questionnaire. The three items selected had factor loadings of .86, .88, and .86. The scale has a Cronbach's alpha of .75.

Sales skepticism was measured using the scale skepticism toward a store's promotion by Xia et al. (2010). This scale consists of three items: (1) *"I think the store offers the promotion to mislead consumers"*, (2) *"I think the store wants to get more sales by fooling consumers"*, and (3) *"I think the store was not sincere in offering this promotion"*. The scale has a Cronbach's alpha between .77 and .84 and all items had satisfactory factor loadings. All three items in this scale were used in the modified construct for the questionnaire.

The variables *private labels versus national brands* and *preferable store attributes* were measured using 5-point semantic differential scales created based on the method by Dickson and Albaum (1977). For private labels and national brands, we included quality, price, value, availability, and taste whereas they all ranged from 1 = negative (that is, low or bad) to 5 = positive (high or good). For store attributes, we included price competition, distance, promotions, member advantages, fruit/vegetable assortment, parking, service, general assortment, opening hours, convenience, amount of diet-friendly assortment, product quality, and brand assortment.

For loyalty, we are asking for the participants' actual behavior and the scale is thus not based on an existing scale. The goal of this block is to examine the respondents' preferences and motivations for choosing a grocery store. We consider where the respondents go grocery shopping, what grocery discounter they prefer, their perception of what separates grocery stores in general, and what separates the low-price chains from one another. Price image was measured directly by asking which grocery discounter they perceive as the cheapest.

All the scales used have an acceptable level of reliability with Cronbach alphas above 0.7 (Gripsrud et al., 2017). The variables *temporal price search propensity, spatial price search propensity, sales proneness, price sensitivity, impulsiveness, sales skepticism* was measured on a 5-point Likert-scale from 1 (= strongly disagree) to 5 (= strongly agree). Each of these variables was constructed

of three statements which the participants were asked to select their level of agreement. Having all variables measured with the same scale makes the future comparisons and analyses easier. The questionnaire was standardized, meaning that the same survey was distributed to all the participants. This ensures that the data are comparable and make the following data processing more efficient (Malhotra, 2020). An overview of the questionnaire can be found in table 1 and the finalized questionnaire can be found in appendix C.

4.2.1.3 Sample

The target population was outlined as all Norwegians older than 18 years. Most of the Norwegian population purchases groceries from time to time and thus must make a choice as to what grocery stores they visit. The questionnaire was distributed through Qualtrics using an anonymous link that was shared within our personal online networks through friends, family, and social media and thereafter forwarded further by our acquaintances. Thus, the sample is classified as a nonprobability convenience sample which is the least costly and time-consuming of the sampling techniques. It is not appropriate to generalize results from this sampling technique to the target population. However, this sampling method can be used for pilot studies and works well for generating ideas, hypotheses, and insights (Malhotra, 2020, p. 363). When also considering the limited resources and timeframe, the sampling technique was deemed applicable for this study.

The questionnaire collected data throughout May. It took approximately 8-10 minutes to complete the questionnaire. The Norwegian population consists of approximately 4.5 million people aged 18 years or older. Given the sample size formula $= \frac{(z)^2 \times std.dev.(1-std.dev.)}{(error)^2} = \frac{(1.96)^2 \times 0.5(0.5)}{(0.05)^2}$, the ideal sample size is 385 people given a 95 % confidence level, 5 % error margin, and a standard deviation of 0.5 (Qualtrics, 2023). As the results will not be generalizable to the population, and thus not statistically significant, the suggested sample size was rather used as a target number (section 4.2.1.5).

Table 1

Questionnaire overview

Block	Scale	Question
Block 1: Introduction	Yes/no	I agree that the collected data from the survey can be used in the master's thesis.
Block 2: Private labels vs national brands		
Private labels	5-point semantic differential scale	I think private labels usually are…
National brands	5-point semantic differential scale	I think national brands usually are…
Block 3: Attributes	5-point semantic differential scale	To what extent are the following factors important to you in choosing a grocery chain?
Block 4: Price search propensity		
Temporal	5-point Likert scale	Sometimes… I postpone my shopping trip to wait for lower prices I put off buying an item to wait for a lower price I buy what I need over 2 or 3 trips to get the lowest prices
Spatial	5-point Likert scale	To get the lowest prices... I often compare prices in two or more grocery stores I shop sales items in several stores on the same shopping trip I often shop at 2 or 3 different stores
Block 5: Sales proneness	5-point Likert scale	If an item is on sale... then there is a reason for me to buy it I buy it over my favorite item in the same category am I more likely to buy it versus items that are not on sale
Block 6: Price sensitivity	5-point Likert scale	To what extent do you agree or disagree with the following statements? I am willing to make an extra effort to find low prices at the grocery chains I am willing to change my shopping list to take advantage of good offers I find in the store I am concerned about price differences in the grocery industry
Block 7: Impulsiveness	5-point Likert scale	I purchase… …often things without thinking …new groceries spontaneously sometimes because I want to try something new …what I want, without thinking about consequences
Block 8: Sales skepticism	5-point Likert scale	I think the grocery chains... ...have offers to give customers the impression that they are cheaper than what they actually are ...desire higher sales by giving customers the impression that they are cheaper than they actually are ...have higher prices than what they advertise
Block 9: Loyalty		How often do you shop at the following grocery chains during a typical week?
	Open-ended	What do you think sets the various grocery chains apart from each other?
	Open-ended	What do you think separates the various low-price chains (Kiwi, Rema 1000, Extra and Oda) from each other?
	Constant sum	Which of the discount chains do you prefer?
Block 10: Price image		Which of the following discount chains do you perceive as the cheapest?
Block 10: Profiling variables		Gender, age, postal code, education, employment status

4.2.1.4 Pre-testing

A pre-test was distributed to eight respondents to improve the language, clarity, and structure of the questionnaire, as well as identify and eliminate any potential problems. The respondents of the pretest were from the same population as those of the finalized questionnaire. They were asked to evaluate all aspects of the questionnaire, including the wording, form and layout, question difficulty, and content. The respondents encountered a couple of difficulties and misinterpretations, and the necessary changes were made after a thorough evaluation of the feedback.

4.2.1.5 Data cleaning

The questionnaire received 122 responses. Of these, 20 responses were incomplete and thus removed from the dataset. The remaining 102 responses had a 100% completion rate. One respondent recorded an age below 18 years and were thus removed because the respondent was not considered part of the target population. After successfully cleaning the dataset for extensively unfinished or flawed responses, we were left with 101 complete survey responses. The sample is small, and the questionnaire should ideally have received 385 responses as calculated above. However, due to limited time and resources, it was necessary to stop the data collection at the given time. After exploring the data set further, it was not found any missing or incorrectly coded values and we proceeded with the analyses.

4.2.2 Observations – price tracking

During the period from the end of March to the middle of May, we collected data on a selection of campaign products for Easter goods by operating as price trackers. Section 2.6 describes how a price tracker operates. The data gathering began before Easter in order to be able to capture data before the price war started. Furthermore, the collecting of data continued after the price war to examine how prices adjusted accordingly. The methodology approach utilized in the price tracker data gathering was observations. This technique is generally used to describe people's behaviors, activities, actions, interactions, or organizational processes (Johannessen et al., 2017, p. 127-129). In this study, measurements were obtained by observing prices on a selection of products at low-price retailers (Silkoset et al., 2021, p. 105). Prices of products from national brands were

compared with the corresponding private labels. The purpose was to examine the price change of the selected items. Observations were utilized as a supplement approach to answer the research question and to investigate from a different perspective.

4.2.2.1 Data selection
The product categories consist of snacks, beverages, fruit, meat, breakfast products, and other divisions featuring a total of 49 products from national and private labels. The products in each category were selected based on typical food items available in most grocery stores, focusing on Easter campaign products. Typical seasonal products in Norway during easter are oranges, Kvikk Lunsj, and Solo. Following the initial round of data collecting, additional private label products were included for a better basis for comparing private and national brands. Certain products were excluded from the examination because of the challenge of comparing the chains or because they did not have the product.

Products with different weights or pack sizes were clarified in advance to determine what should be utilized as the starting point. Nonetheless, there was a need for further adjustment of some products in terms of weight or pack size after the first round of price tracking. Some products were initially noted with prices but were later converted to a price per kg for more accurate comparisons. On a few products, the retailers operate with distinct national brands from different manufacturers. For instance, comparable goods were examined in the price gathering of hamburgers. Appendix D provides an overview of the products for which prices were collected.

4.2.2.2 Implementation of the data collection
An audit is one method for gathering data from retailers where researchers implement in-person visits. Structured observations were utilized where what was to be observed and how measurements were to be gathered was decided in advance (Malhotra, 2020, p. 137-211). Prices were compared between the competitors, as well as the price evolution of each product was examined during the period. Prizes were collected from Kiwi, Rema 1000, Extra, and the online store Oda. The observer was conscious of operating considerately, discretely, and without disrupting customers or employees.

Deviations may occur between the shelf price and the cash register price.

To capture any differences, the most beneficial would have been to purchase all the products each time. Our approach was based on VGs matbørs. The journalists working with VGs matbørs were willing to meet us and explained how they operate and provided recommendations for the price tracker data collecting. The shopping list they use serves as the foundation, and all of the chains must have the item. According to their investigation, prices fluctuate constantly, especially in (typical price war) seasons such as Christmas and Easter. Therefore, contemporaneity is crucial. We aimed to ensure contemporaneity; however, it was not possible to achieve the same level of accuracy due to limited resources. Nonetheless, certain controls were performed on the product each time to ensure that the pricing on the shelves corresponded to the receipt. Furthermore, random samples were gathered beyond the days of data gathering to detect any discrepancies.

Additionally, the optimal would have been to use three people observing the prices at the same time, but owing to limited resources, this was not achievable. As a result, we were attentive regarding the time frame for data gathering. Due to the driving distance between the stores, the selected time was between 3 pm and 5 pm. Ongoing examinations were conducted before and throughout Easter to observe how prices altered before and during an ongoing price war. Three inspections were performed before Easter, and two checks were conducted during the Easter week. The following took place on various days. After easter, 5 price checks were conducted in the following weeks. To ensure accuracy, the subsequent executions were done every Wednesday.

In the area of Fredrikstad, ten rounds of data gathering were conducted. The objective was to find grocery stores that were selling all of the products. However, this proved to be more challenging than anticipated when it was discovered that the same retailer carried the item one week, but not on a later occasion. The majority of the price tracker data gathering took place in six stores (2 Kiwi, 2 Extra, and 2 Rema 1000). Geographic distance influenced the store's selection such that the time window stated above remained as precise as feasible. Additional factors included that these stores were less crowded, resulting in easier to collect the prices. Finally, the purpose was to visit the same stores as far as possible each time.

The main method utilized to register prices was taking pictures of price tags with a telephone. The benefit of such an approach is that it is easy to go back

and control that the prices were correct. Furthermore, as certain items were listed with a price and others with a price per kilogram, possessing a picture was advantageous because the price tags provided information about both. This method was deemed to be the most precise, (given the limited time and resources) cost effective and time-consuming. There were a few cases where prices were written on the phone because the conditions were not suitable for taking pictures. However, this method was time-consuming and caused uncertainty regarding whether or not the exact price was noticed.

On a few occasions where there was doubt, the pricing was verified again shortly afterward to ensure that the proper price was stated. In circumstances when the settings were unsuitable for photographing the price tag or the price was not specified on the price tag, the product was usually purchased with the receipt serving as registration. One issue was that the stores did not always have the products, the price was displayed on the shelf, or there was no price tag. Then the observer either purchased the product, asked the employees about the price, or investigated another store. Unfortunately, during the data collection, there were instances where the employee could not find the correct price or the store did not have the items.

Initially, it was necessary to have the list of products in appendix D on the phone and strictly walk through the stores. However, the list was always examined by the observer before walking out of the store to check that all prices were included. Coding schemes that consist of lists of names or categories are the primary measuring instrument of observational approaches. The coding manual should be updated when the coding schemes evolve (Bakeman & Quera, 2011, p. 22-24). Before gathering data, which products to observe were decided and classified into different categories, as shown in appendix D. The coding scheme was developed in Excel containing dates for the observations and categories. The observation data is a cell and the prices were entered in the codebook after each observation (Malhotra, 2020, p. 439). The prices were immediately collected in an Excel document following the data gathering. It was essential that everything occurred on the same day so that it was possible to confirm the price observations against the product list and assure the quality of the work.

Deficits might be present with 49 items, and certain products might be forgotten in the data gathering. If deficits were discovered when putting the numbers into Excel, the price was checked as quickly as possible. The initial

implementations proved to be time-consuming as it took time to examine each store and later write the data in code form. Efficiency increased after a few rounds as price trackers when the authors no longer relied on the product list and became aware of where the goods in the store were placed. As a result, the amount of time spent in each store was reduced. Furthermore, the accuracy discrepancy emphasized by VGs matbørs decreased.

4.2.2.3 Ethical considerations observations

All activities that have an impact on other people must be evaluated using ethical criteria. In circumstances where it is apparent who will participate in the research, informed permission is required. Consent is not necessary in the event of covert observation (Johannessen et al., 2017, p. 83-91). A comprehensive ethical evaluation was performed to determine if we should contact the stores prior to the observations. However, because prices were observed rather than people, it was concluded that this was not necessary. In retrospect, the observers felt somewhat uncomfortable during the data gathering and evaluate after that permission could have been requested. Then we could explain the purpose of the observations so that the observers were welcome during the data collecting.

4.2.3 In-depth interviews

A qualitative in-depth interview was conducted to obtain complementary answers and a special form of insights for our research. The aim was to gain knowledge and a deeper understanding from someone who works within the industry. Furthermore, it can be useful when interviewing professionals or competitors who are unlikely to share information in a group context (Malhotra, 2020, p. 168-169). An in-depth interview with an industry expert was conducted to obtain further insights regarding the Norwegian grocery industry. The interview did not answer the research question alone, however, was a contribution to support and useful insights from the industry.

4.2.3.1 Selection strategy

The objective of qualitative research is to gain as much knowledge as possible regarding the phenomena and the surroundings. We utilized strategic selection with a defined purpose in advance about who could provide the necessary data (Johannessen et al., 2017, p. 116-117). Given the topic of our thesis, it was

essential to contact people with relevant experience, broad market knowledge, a knowledge of the competitive environment, and an understanding of why decisions are made. Additionally, knowledge about price wars between the grocery chains. We wanted at least one in-depth interview and contacted relevant people working in the grocery industry. This was accomplished as it was one industry professional that was interested.

4.2.3.2 Recruitment strategy

The informant was recruited through email. The benefit of such a recruitment strategy is that is it less time-consuming and cost-saving. One disadvantage is that there might be few people who respond or do not want to participate (Johannessen et al., 2017, p. 114). However, given that we had no prior connection to the person/company, the decided recruitment strategy was considered the most beneficial. Those who were contacted received information about the study and the purpose as well as contact information if there were more questions. The informant was informed in advance that the interview would not be recorded. The recording might be necessary to secure important data and prevent misunderstandings. However, because both of us participated where one was transcribed and the other asked the questions, this was deemed unnecessary.

4.2.3.3 Implementation

The interview guide was developed based on existing theory and was utilized as a guiding framework (Silkoset et al., 2021, p. 119-120). A structured interview was employed, with predetermined topics, questions, and sequences. The questions were open-ended, without any pre-determined answer options resulting in complementary answers. In addition, follow-up questions were asked if necessary (Johannessen et al., 2017, p. 148). The interviewer should maintain neutrality (Ritchie & Lewis, 2003, p. 159-160) and therefore tried to avoid asking leading questions. There was also an emphasis on staying as impartial as possible. The interview was conducted on Teams, and the timing was planned according to what suited the informant. Additionally, the transcribing was completed right after the interview. Appendix E comprises the interview guide.

4.2.3.4 Ethical considerations

The ethical aspect of research is crucial to consider (Johannessen et al., 2017, p. 83) and these ethical concerns are connected to the purpose of the study and guaranteeing the comfort level of the informant (Malhotra, 2020, p. 183). Before the interview, the informant received an email with an explanation of the research purpose and his/her rights. Additionally, the identity and company would be anonymized, no audio recordings would be produced, and the person could withdraw from the study at any time.

During the implementation, it was important that the informant did not feel forced to answer undesired questions. The Personal Data Act imposes notice or licensing obligations on projects that process personal data and if it is going to be completely or partially registered electronically (Johannessen et al., 2017, p. 88). The project was reported to NSD, albeit the informant's identity has been anonymized. According to the Public Administration Act, all information that can be tracked back to individuals is subject to confidentiality (Johannessen et al., 2017, p. 91). The informant cannot be identified, and only the responsible people have access to the transcription and e-mail correspondence. The informant gave written consent to participate.

5 Analysis and results

The section will begin with a secondary source examination. Secondly, the cluster analysis study and results will be provided, beginning with a discussion of reliability and validity. Following, an assessment of the data quality of the observation study, as well as a presentation and interpretation of the findings. Finally, the results and data quality from in-depth interviews are provided.

5.1 Secondary sources

The three standardized studies were obtained to acquire knowledge about the consumers' general shopping habits, drivers, and their future focus and habits in terms of grocery shopping. From the two syndicated panel surveys conducted by Norstat, we noticed several things of interest. First, 76 % of consumers use 2-3 grocery chains when buying groceries, and 63 % grocery shop 2-3 times a week. The majority (87 %) only purchase groceries at physical stores whereas Rema 1000 and Kiwi are the most accessible chains. 56 % declare Kiwi as one of the chains they shop at most often, followed by Rema 1000 with 51 % and Extra with

35 %. Low prices (67 %) are perceived as the most important factor when deciding where to purchase groceries, with location (58 %) as the second most important factor, promotions (54 %) as the third most important factor, and member advantages (39 %) as the fourth most important factor. On the other hand, inspirational aspects (2 %) and professional knowledge among the staff (2 %) are the least important factors. Price has increasing importance among consumers and the majority state that they will purchase discounted items more often (59 %) and check prices on products before deciding to make a purchase (59 %). Additionally, 51 % of the respondents express that they will compare prices between the grocery chains in the future (Aller Media, 2023; Schibsted, 2023).

The market report by NielsenIQ, Norske dagligvarekjeder 2022, was utilized to gain more understanding of the Norwegian grocery market. First, the consumers have an average of 4.4 stores within shopping distance and typically visit 3.7 chains at least once a month. Further, they reported that Rema 1000, Extra, and Obs are the three grocery chains that the majority of Norwegians in the local market consider to possess favorable private labels. One out of four people prefers First Price. Following are Eldorado and Rema 1000's private label. The more exclusive private label Jacobs shares first place together with First Price of the private label's customers will recommend further. Additionally, it is important for customers that the grocery chains offer private label products in several categories. Dry goods, fresh meat/chicken, and bread are at the top of the list (NielsenIQ, 2022; Schibsted, 2023).

5.2 Questionnaire

The final sample consisted of 101 respondents whereas 60.4 % were female and 38.6 % were male. The majority (70.3 %) had a fulltime job and consider Kiwi as the least expensive grocery store. The demographic characteristics of the sample can be found in table 7 (section 5.2.2).

5.2.1 Reliability and validity

The reliability and validity of the study were assessed prior to any analyses. Reliability refers to the degree to which a scale yields consistent results if the measurement is performed repeatedly. Because the scales in this study are multi-item scales, we calculated the internal consistency reliability using Cronbach's alpha. The coefficients for each variable construct can be seen in table 2. Cronbach's alpha can range from 0 to 1 whereas a value of 0.6 or less in general

indicates low internal consistency reliability (Malhotra, 2020, p. 302-303). As can be seen in the table, all the variable constructs inherited satisfactory internal consistency to conduct analyses. In addition to *temporal* and *spatial*, the variable *price search* was calculated as one variable construct. The descriptive statistics for each item and variable can be found in appendix F.

Table 2

Internal consistency reliability for each variable construct

	Temporal price search	Spatial price search	Price search	Sales proneness	Price sensitivity	Impulsiveness	Sales skepticism
Cronbach's alpha	.83	.86	.89	.70	.82	.73	.74

Table 3

Pearson correlation matrix

	1	2	3	4	5	6	7
1 Price search	1						
2 Temporal price search	.91**	1					
3 Spatial price search	.94**	.71**	1				
4 Sales proneness	.37**	.36**	.33**	1			
5 Price sensitivity	.64**	.57**	.61**	.55**	1		
6 Impulsiveness	-.35**	-.34**	-.30**	-0.07	-0.11	1	
7 Scepticism	0.10	0.07	0.12	0.03	0.01	0.07	1

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

Validity refers to the extent to which a measurement accurately captures what it is intended to measure (Gripsrud et al., 2017, p. 61). To assess this, we performed a Pearson correlation analysis to investigate the relationships between the variables. This enabled us to observe whether the constructs are correlated. The results can be seen in table 3. We found that $p > .05$ for the relationship between *skepticism* and all other variables, meaning that there is no significant correlation between these constructs. This variable was removed from further analyses. It was also found that $p > .05$ for the correlation between *impulsiveness* and *sales proneness,* and *impulsiveness* and *price sensitivity.* However, these variables were kept in the dataset because they have a significant correlation with the remaining variables. The rest of the constructs were significantly correlated. Whereas *temporal price search* and *spatial price search* are highly correlated ($r = .71$), we decided to continue with price search as one variable. We were thus left with four variable constructs: *price search, sales proneness, price sensitivity,* and *impulsiveness.*
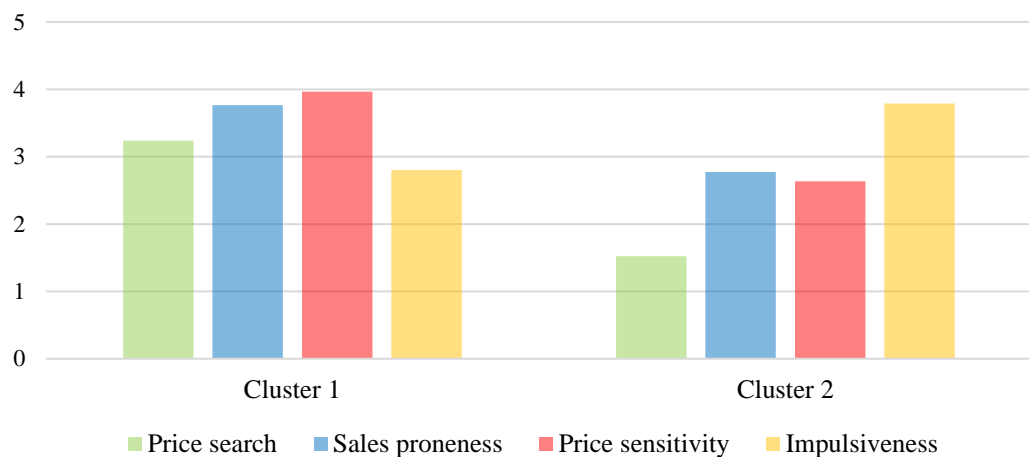
5.2.2 Cluster analysis

After assessing the reliability and validity of our data, we proceeded with the cluster analysis. The objective of the analysis was to assess whether there were any differences in the sample. With regard to the four input variables, *price search propensity, sales proneness, price sensitivity,* and *impulsiveness*, the purpose was to classify the respondents into homogenous groups based on their survey responses. The goal of any cluster analysis is to make the respondents in one cluster as similar to each other as possible, while being as different from the other clusters as possible (Malhotra, 2020, p. 634-645). Knowing about potential differences in the population is crucial for understanding what impact the price wars have on consumers.

We first performed hierarchical clustering. Because different distance measures can result in different clustering results, we experimented with three different methods: (1) single linkage (nearest neighbor) + euclidean distance, (2) average (between groups) linkage + euclidean distance, and (3) Ward's method + squared euclidean distance. The accompanied dendrograms display different solutions, where horizontal lines denote the number of clusters, and the vertical lines denote merged clusters. They can be seen in appendix G. Performing cluster analysis on the same data using different methods and distance measures is a way of assessing the reliability and validity of the cluster solution. As can be seen from the dendrograms, the cluster solutions are not stable across methods which suggests lower reliability and validity for the solution and further analysis (Malhotra, 2020, p. 645). Consequently, we proceeded with Ward's method and squared euclidean distance which proposed the clearest result. As can be seen from the dendrogram, two clusters are the suggested solution.

We repeated the analysis with two defined clusters. Cluster 1 contained 64 respondents and cluster 2 contained 37 respondents. We then proceeded with a K-means cluster analysis with the goal of optimizing the cluster results from the hierarchical clustering (Malhotra, 2020, p. 646). As can be seen in table 4, this is a situation where our K-means clustering has improved our hierarchical clustering solution. The size of the clusters is relatively balanced with 60 respondents in cluster 1 and 41 respondents in cluster 2. As pictured in figure 1, cluster 1 consists of respondents who are more prone to price search and store promotions, and that are more price sensitive. Cluster 2 however, consists of respondents who are more impulsive and less concerned about prices.

Table 4

Overview of final- and initial cluster sizes

		Final clusters	Initial cluster
Cluster	1	60	64
	2	41	37
Valid		101	101

Figure 1

Illustration of differences in final cluster centers between cluster 1 and 2

The final cluster centers can be seen in appendix H. The clusters can be named the "Price concerned" (cluster 1) and the "Impulsive" (cluster 2). To test whether the differences between the clusters are significant, we performed an ANOVA analysis with the clusters as the factor and clustering variables as dependent variables. The results in table 5 show that the F-tests all have p-values < .05 and there is thus a difference in the means of each variable between cluster 1 and cluster 2. Thus, the hypotheses H2, H3, H4, and H5 are supported.

By comparing the clusters with the other variables measured in the questionnaire, we can create profiles and differentiate them from one another. The preferred grocery store and the demographic characteristics of the respondents can be found in table 6 and table 7 below. Cluster 1, the "Price concerned", are in general younger or older than the respondents in cluster 2 with 60 % of the respondents being either below 30 years or older than 59 years. 1/3 of the respondents have high school as their highest completed education and another 1/3 of the respondents have a master's degree.

Table 5

Analysis of variance (ANOVA) outputs

	Mean Square	F
Price search	71.70	147.98***
Sales proneness	24.08	39.48***
Price sensitivity	43.25	74.82***
Impulsiveness	23.81	32.04***

*Note: *** $p < .001$*

These respondents are more diverse when considering their perception of the lowest priced grocery store with 43.3 % considering Kiwi as the lowest priced and 31.7 % considering Rema 1000. This is reflected in their choice of preferred store where the mean preference is almost identical for Kiwi (= 36.85) and Rema 1000 (= 36.80) with Extra (= 23.10) not far behind. Knowing that these respondents are more price sensitive in general in addition to being more prone to search for the best prices and to shop sales items, it can be interpreted that this cluster is less loyal than cluster 2.

Cluster 2, the "Impulsive", are primarily aged between 30-59 years (70 %) and highly educated with 78 % having minimum a bachelor's degree. They are predominantly full-time employed. The majority consider Kiwi as the lowest priced grocery store (58.5 %), which is reflected in their choice of preferred store whereas Kiwi has a mean preference score of 58.41. It can be assumed that this cluster has more financial means than cluster 1 and thus does not feel the necessity to be so concerned about prices. In addition, they often can afford to be impulsive and buy whatever they would like. Because they do not search for the best prices or store promotions, they are more likely to shop at the store they perceive as the lowest priced, whereas cluster 1 who are aware of the prices at different stores are moving more fluidly across stores.

Table 6

Preferred grocery store in sample

	Cluster 1			Cluster 2			Full sample		
	Max	Mean	Std. dev	Max	Mean	Std. dev	Max	Mean	Std. dev
Kiwi	100	36.85	22.92	100	58.41	29.33	100	45.60	27.70
Rema 1000	100	36.80	21.37	100	21.17	22.19	100	30.45	22.94
Extra	70	23.10	18.84	80	19.39	20.00	80	21.59	19.31
Oda	50	3.81	10.06	40	4.19	9.71	50	3.97	9.87

Table 7

Demographic characteristics of questionnaire respondents

Respondent characteristics	Cluster 1		Cluster 2		Full sample	
	n	%	n	%	n	%
Gender						
Female	40	66.7	21	51.2	61	60.4
Male	20	33.3	19	46.3	39	38.6
N/A			1	2.4	1	1
Age						
18-29	18	30	8	19.5	26	25.7
30-39	7	11.7	9	22	16	15.8
40-49	9	15	6	14.6	15	14.9
50-59	9	15	14	34.1	23	22.8
60-69	9	15	2	4.9	11	10.9
70-79	8	13	2	4.9	10	9.9
Highest education						
High school	20	33.3	7	17.1	27	26.7
1. year study	5	8.3	2	4.9	7	6.9
Bachelor	14	23.3	21	51.2	35	34.7
Master	20	33.3	11	26.8	31	30.7
Other/unknown	1	1.7			1	1
Employment						
Student	8	13.3	1	2.4	9	8.9
Part-time employee	4	6.7	1	2.4	5	5
Full-time employee	34	56.7	37	90.2	71	70.3
Temporarily laid off	1	1.7			1	1
Retired	12	20	2	4.9	14	13.9
Other	1	1.7			7	6.9
Lowest priced grocery store						
Kiwi	26	43.3	24	58.5	50	49.5
Rema 1000	19	31.7	6	14.6	25	24.8
Extra	2	3.3	2	4.9	4	4
Oda	1	1.7			1	1
Equally priced	7	11.7	7	17.1	14	13.9
Unknown	5	8.3	2	4.9	7	6.9

5.2.3 Private labels and national brands

To analyze the semantic differential scales in block 2, a profile diagram was developed. To create the diagram, the data was explored through descriptive and frequencies. Figure 2 shows that national brands are perceived to have better taste, to be more accessible, to be more expensive, and to be of higher quality. Compared to national brands, private labels are considered inferior in taste, less available in product categories, lower in price, and of lesser quality. They are perceived as equally good purchases.

Figure 2

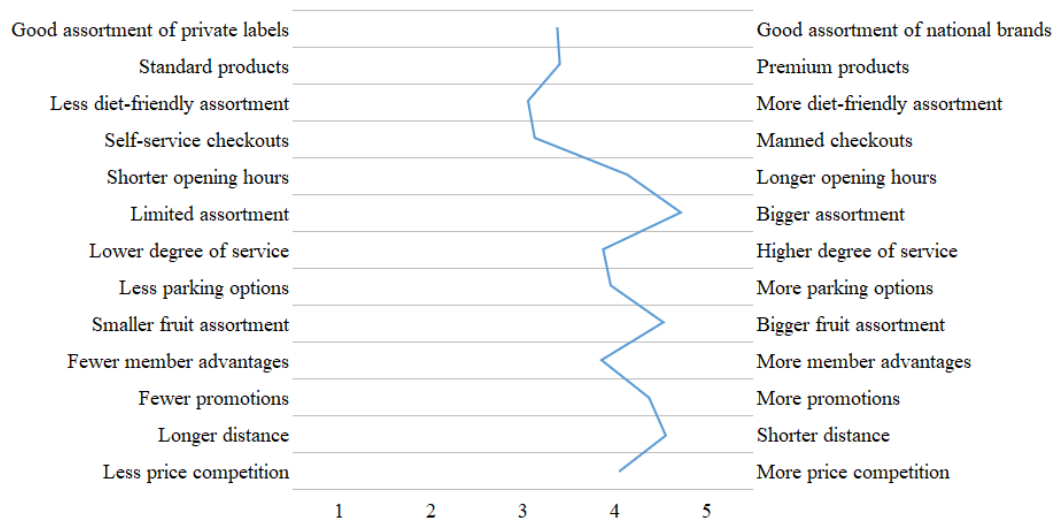*Profile diagram for private label and national brands*
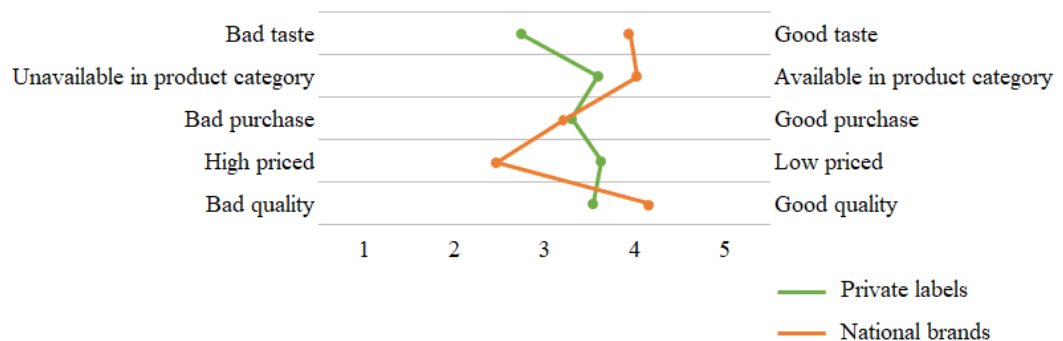
5.2.4 Attributes

A profile diagram was developed to investigate the semantic differential scale in block 3 where the participants were questioned about how essential the following factors presented in figure 3 are when selecting a grocery chain. Assortment and short travel distance are the most important attributes, followed by promotions, opening hours, and price competition. Longer opening hours, a larger assortment of fruits and vegetables, more deals, and a shorter distance to the store are all deemed important. High pricing competitiveness, more membership advantages, better parking options, premium products, and a higher level of service are additionally valued. It is slightly more essential for the participants that the retailers have a wider selection of national brands than private labels. The same applies to allergy-friendly product selection and staffed or self-service checkouts.

Figure 3

Profile diagram for attributes

	1	2	3	4	5	
Good assortment of private labels						Good assortment of national brands
Standard products						Premium products
Less diet-friendly assortment						More diet-friendly assortment
Self-service checkouts						Manned checkouts
Shorter opening hours						Longer opening hours
Limited assortment						Bigger assortment
Lower degree of service						Higher degree of service
Less parking options						More parking options
Smaller fruit assortment						Bigger fruit assortment
Fewer member advantages						More member advantages
Fewer promotions						More promotions
Longer distance						Shorter distance
Less price competition						More price competition

5.3 Observations - price tracking

5.3.1 Data quality

5.3.1.1 Reliability

The accuracy of the data, the type of data utilized, how it is acquired, and the way it is processed are all aspects of reliability. Observations are context-dependent and value-laden. Giving the reader a detailed description of the context and approach during the research process might strengthen the reliability (Johannessen et al., 2017, p. 232). The benefits of utilizing structured observation are that it decreases the possibility of observer bias and improves the data's reliability (Malhotra, 2020, p. 211). Before the price tracker data gathering started, we discussed whether permission should have been obtained in advance. Since we do not have observed people, but rather the retailers' behavior through prices, we concluded that as long as we acted considerably there was no need. However, it was somewhat uncomfortable walking around taking pictures of price labels, and in retrospect, it maybe might have been better to ask for permission.

Test-retest-reliability is about repeating the research at two different times (Johannessen et al., 2017, p. 37). If the results are consistent, this indicates high reliability. If the observational studies had been conducted on different items, the outcomes would probably be different. However, the products selected have been thoroughly evaluated and ought to provide a representative sample selection that

represents the overall trend. Internal reliability might also be investigated when several researchers investigate the same phenomenon. If numerous people reach the same conclusion, this indicates high reliability (Johannessen et al., 2017, p. 37). There is little research on price trackers in the Norwegian grocery market. As a result, internal reliability cannot be achieved in this study. However, a detailed description of the procedure for carrying out the observations has been provided. This contributes to increasing the reliability of the study. It is also crucial to mention that timing biases might have occurred. Because the observations could not be carried out simultaneously, there might have been variations in pricing fluctuations at the chains.

5.3.1.2 Internal and external validity

Credibility is about whether the approaches and findings utilized in the examination reflect the purpose of the study. Additionally, if the research is able to portray reality. The use of method triangulation contributes to the study's internal validity (Johannessen et al., 2017, p. 232). To improve the internal validity of the observational study, considerable time was spent prior to the data collection determining which products should be included. None of the grocery chains have been given the opportunity to take part in the findings. As a result, this might weaken the observation research's internal validity. Transferability refers to the ability to provide descriptions, concepts, interpretations, and explanations that are applicable to areas other than the one being researched (Johannessen et al., 2017, p. 231). Since little research has been conducted on price trackers in the Norwegian grocery market, determining the external validity of this study is challenging. As a result, additional studies are needed to determine the generalizability.

5.3.1.3 Verifiability

Verifiability refers to the extent to which the results from the qualitative investigation can be corroborated by other researchers through comparable studies (Johannessen et al., 2017, p. 234). Because our findings are time-dependent, it is difficult to verify them. However, as decisions in the research process are included so that the reader can follow and evaluate, this strengthens the verifiability of this study. In addition, we are aware of the discrepancies in the observation implementations.

5.3.2 Analysis of observations

The data was gathered by operating as price trackers before analyzing the findings. This is a method that Norwegian grocery chains utilize to monitor their competitors. However, we do not know exactly how the chains operate. Before the data collection began, a coding scheme in Excel was constructed where the prices were entered after each observation. Field notes were utilized to write down necessary remarks. It was essential to discern between what was observed and one's own interpretation (Johannessen et al., 2017, p. 138). This was useful if there was a different price on the advertisement poster and price tag, the price was not specified on the price tag, the store did not have the product, or difficult to take pictures owing to many customers. The field notes were entered into the code book for each cell (product) that was applied under the date of observation. In the Excel sheet, a tab was also created for lengthy remarks. The field notes were valuable in the subsequent analysis.

After all the data was entered into Excel, it was reviewed to confirm that nothing was missing. Additionally, random controls were utilized to ensure that the prices were correct. This entails the benefit of having documented price tags and assembling all receipts. The coding scheme was carefully investigated with the objective of examining patterns and products that exhibit clear trends. The coding scheme that was originally created was useful for entering prices and retaining an organized overview. However, it was insufficient to generate graphs and further analysis. As a result, the coding scheme needed to be restructured.

5.3.3 Observation findings

The most interesting results from observations at the four low-price chains Kiwi, Rema 1000, Extra, and Oda are described in this section. The products selected either clearly demonstrate trends or represent an average trend. The purpose of the observations has been to examine the price war on chosen commodities. Furthermore, to investigate how the prices of the low-price chains change with each other. The main findings from the observations demonstrate that prices of certain products have changed drastically, whereas others have changed marginally or not at all during the observation period. Our findings also provide indications that the chains monitor their competitor's prices and utilize price trackers. There is essentially no pricing difference between Kiwi, Rema 1000, and Extra for almost all commodities in the examination. According to our findings, it

appears that there have been price changes from one observation to the next for all three competitors mentioned above. On most products, the changes are the same for all three competitors. However, on average, our findings show that Kiwi and Rema 1000 are a bit cheaper than Extra. When it comes to Oda, the main findings are similar to the competitors, however, there are some products that they charge a higher price. A full overview of the analyzed prices is presented in appendix I.

Figure 4 depicts the price change for a common Easter item; Kvikk Lunsj. Because of the different pack sizes between the chains, this product was entered in the codebook with the price per kilo. Prices for both simple Kvikk Lunsj and multipack were examined. It was not a price war on the simple pack and the observers experienced that several of the chains did not have the product during the observations. The observations before Easter and throughout the week of Easter demonstrate that the price declined at all of the chains. Kiwi is the one that stayed at the highest price level. The results show that after Easter the price per kilo of Kvikk Lunsj increased quite drastically. Our results are somewhat unexpected in that Kiwi stayed at a higher price level. From theory, we know that the grocery chains utilize price trackers and Kiwi have certainly observed that the competitors have priced lower. Our post-Easter data support the claims that the chains monitor each other as they are maintained at the same price with only a few cents difference.
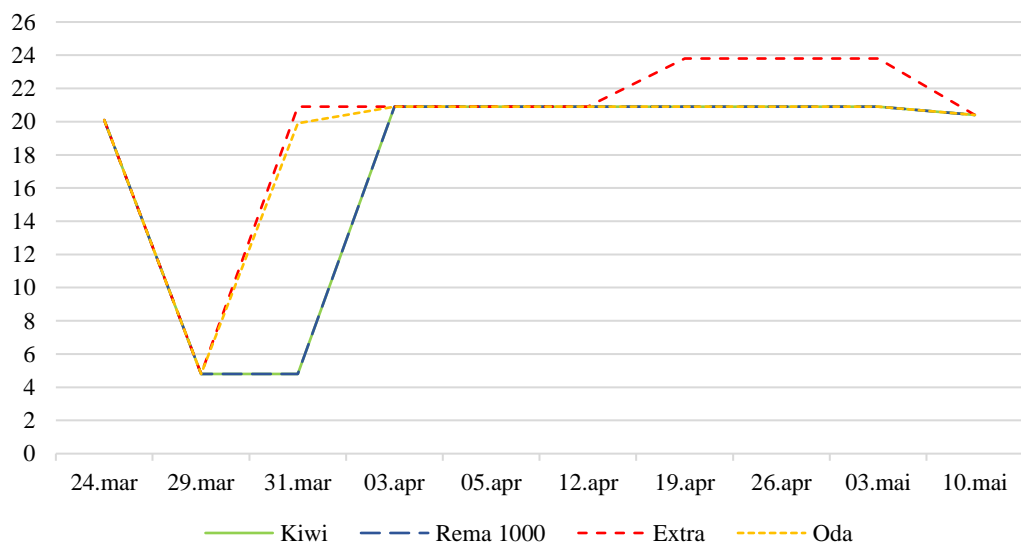
Figure 4

Kvikk Lunsj multipack price/kg observations
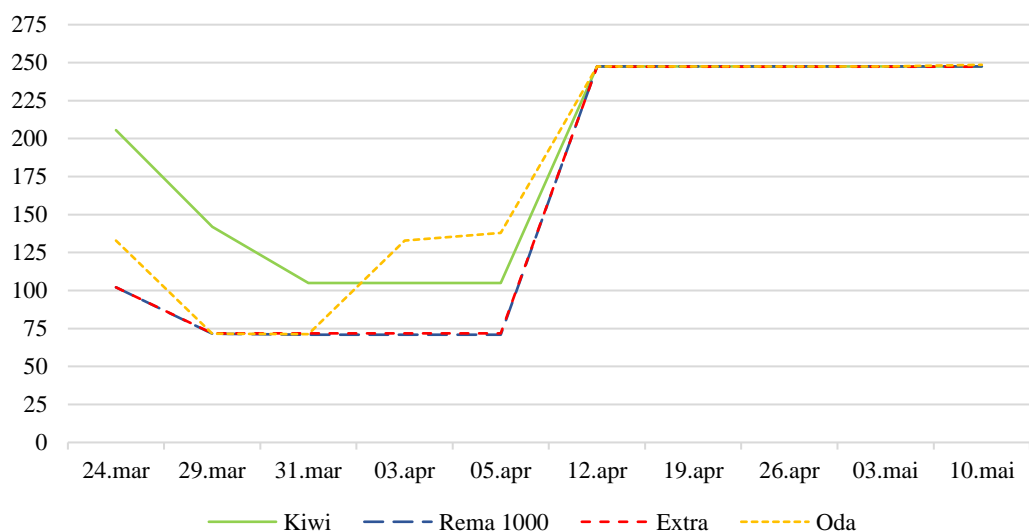
Toro waffles were not a product we anticipated to be the subject of a price war. However, this is one of the observational products with the most significant price changes. Before Easter, the grocery chains promoted Toro waffles (appendix J). As seen in figure 5, the chains have priced waffles at the same price of NOK 20.10 from the first observation round. Following the second round of observations our findings indicate an example of a price war where customers are able to purchase waffles for NOK 4.80. The next observation was conducted after two days, and as the figure shows, Kiwi and Rema 1000 remained at NOK 4.80, whereas Extra and Oda raised their prices to NOK 20.90 and NOK 19.90, respectively. However, an interesting finding was that on the morning of the same day, Oda sold the waffles for NOK 4.80. The following observation revealed that the prices of waffles over three doubled at the next observation. This outcome shows what is typical during a price war. There is a steep downward trend before prices increase again. As the following observations show, Extra was a little higher in price than the competitors. However, the differences are small.

Since a campaign ran prior to Easter, our results indicate that the retailers did not intend to go into a price war on this product. It should be noted, however, this cannot be confirmed because we lack internal data. During two separate observations, both observers encountered empty shelves (appendix J). Friday before Easter, the observer observed that Kiwi was devoid of Easter candy, with the employees replenishing the shelf with other products. This demonstrates the repercussions of a price war for customers.

Figure 5

Toro Vafler observations

Oranges are another popular Easter product. Oda was excluded from this analysis since there was no basis for comparison. As figure 6 shows, the price of oranges before and during Easter was NOK 14.90 for all three competitors. Our findings show that the grocery chains increased the price of oranges by more than double (NOK 32.90) from Easter until a few weeks later. Secondly, we also observe that Kiwi and Rema 1000 followed Extra when they increased the price of oranges.
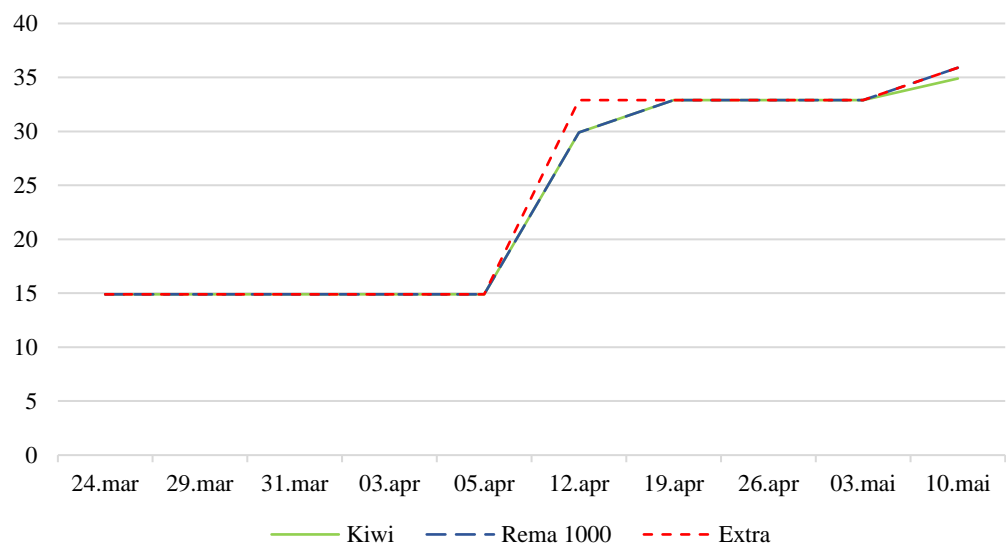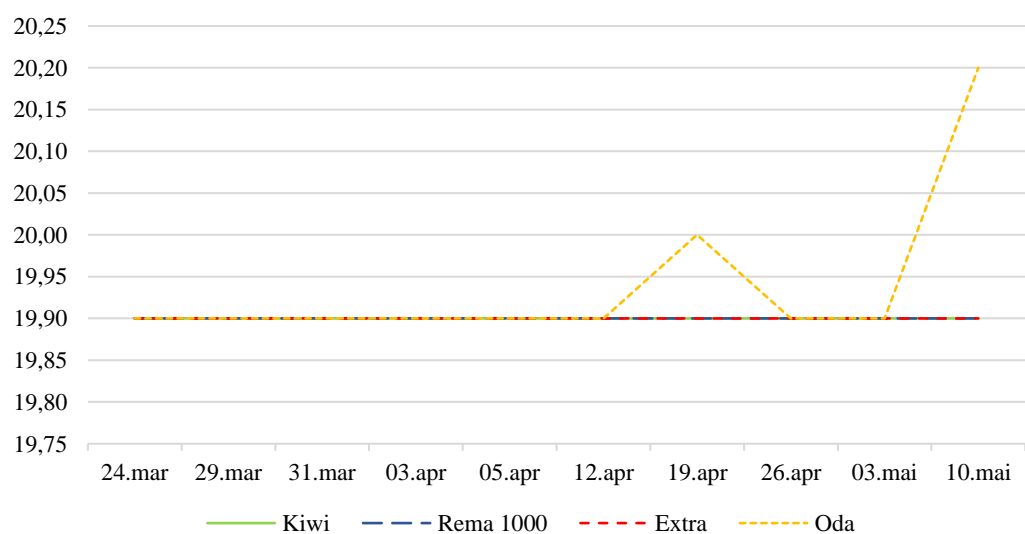
Figure 6

Oranges price/kg observations

Figure 7

Tine Lettmelk 1 % 1 l observations

We decided to include milk in our analysis because it is a commodity that consumers purchase frequently and are thus aware of the price. The objective was to investigate if the price of this product altered or remained constant. Our findings reveal that the price of milk at Kiwi, Rema 1000, and Extra did not fluctuate throughout the observation period. However, Oda adjusted their price from 19 April as figure 7 demonstrates.

Random samples were collected outside of the observation implementation. There might be deviations that occurred at periods other than what was controlled. The only discrepancy that was discovered was on Buer Lomper (potato pancakes). The first two observations demonstrate that Buer Lomper was priced at NOK 10 in all of the grocery chains (figure 8). Extra increased the prices by three NOK after the third observation, as seen in the figure. Additionally, it can be seen that Oda's price rose and fell during the period. A random control was gathered between the 12th and 19th of April where it was observed that Kiwi had increased the price of the product to the same level as Extra. As the figure illustrates, during the same observation period Extra increased the price somewhat more. Our findings show that Kiwi eventually decided to follow Extra, whereas Rema 1000 maintained the same price level throughout the period.

Figure 8
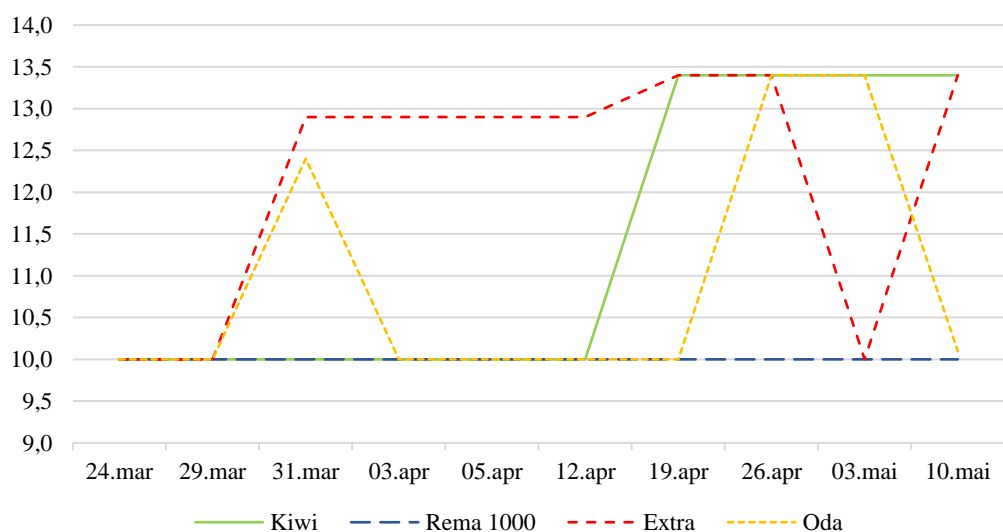
Buer Lomper observations

Figure 9 of Gilde bacon illustrates that in the second observation round, Rema 1000, Extra, and Oda reduced the price. Kiwi did not follow the competitors and the figure shows that the price is back at the same level during the third observation round. Furthermore, Kiwi attempted to raise the price even higher, but the competitors did not follow, and the price was reduced again. The figure reveals that Extra increased the price but reverted to the competitor's price.

Figure 9

Gilde Stjernebacon observations
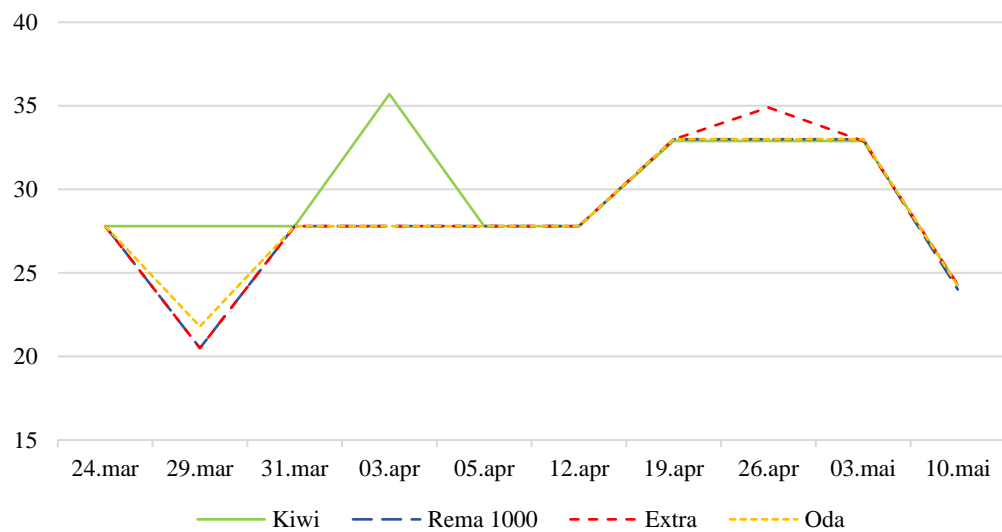
We also examined the pricing of several private labels and compared them to national brands. Overall, the data shows that national brands (figure 10) are more expensive than private labels (figure 11) for the products we analyzed. However, it is necessary to mention that the outcomes might have been different if distinct products had been observed. We compared salted potato chips of private labels and national brands. Because of the various pack sizes, these prices were entered into the codebook with prices per kilo. The figure for Maarud salt potato chips shows that there were some price variations during the observation period. However, it was quite stable. Our results demonstrate that all of the grocery chains increased the price of private label chips. Furthermore, the private label product is priced lower than the corresponding national brand during the entire observation period. Our findings also indicate that the chains monitor each other as the prices are almost identical throughout the period. It would be beneficial to have managed to capture which of the chains was the first mover in increasing the price of the private label.

Page 52

Figure 10
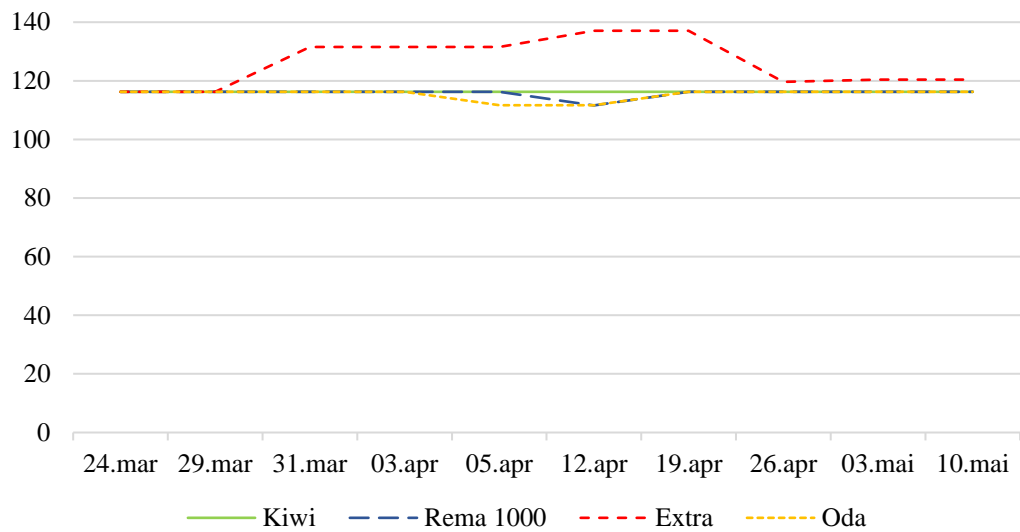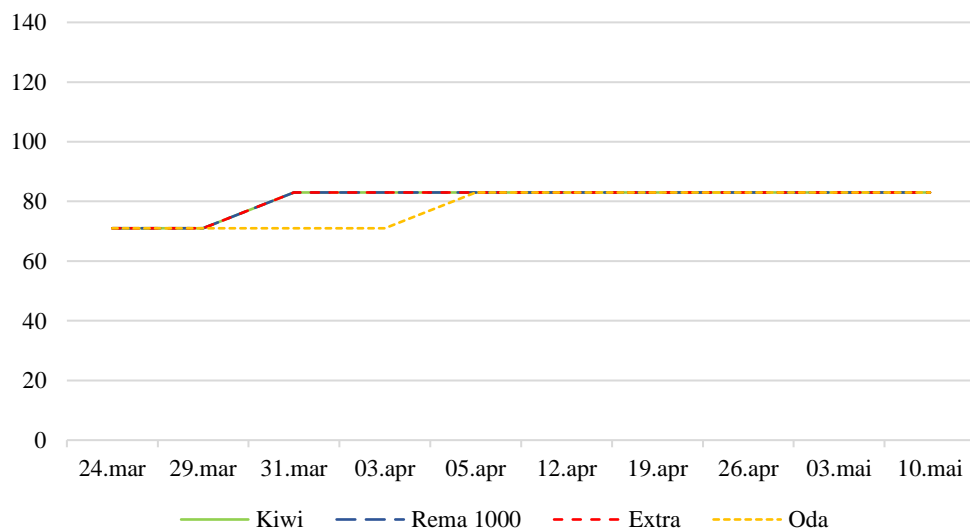
Maarud salt potatochips price/kg observations

Figure 11

Cheapest salt potato chips price/kg private label observations

Gilde sausages (figure 12) were compared against the grocery stores'
private labels of grilled sausages (figure 13). Figure 12 illustrates that Gilde was
reduced in price at all chains prior to Easter. Extra increased the price in the third
observation round, and the competitors followed after the fourth observation.
Additionally, all competitors' prices were raised even more. However, as the
figure illustrates in the most recent observation, the prices were reduced again. It
should be noted that the retailers' private label was included after two

observations. Our findings show that the sausages are less expensive than the corresponding national brand. The noteworthy point, however, is that all of the grocery chains increased the price of the private label. In the last observation round, all competitors have decreased the price to a lower price than the starting price of the observations. Additionally, it is interesting that the prices of the private label's products increase in parallel with the corresponding national brand.

Figure 12
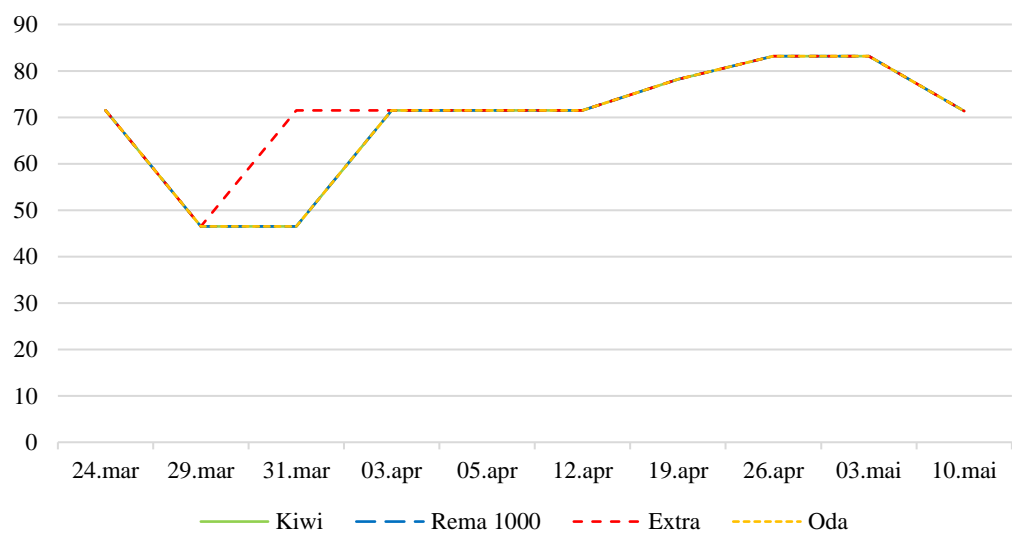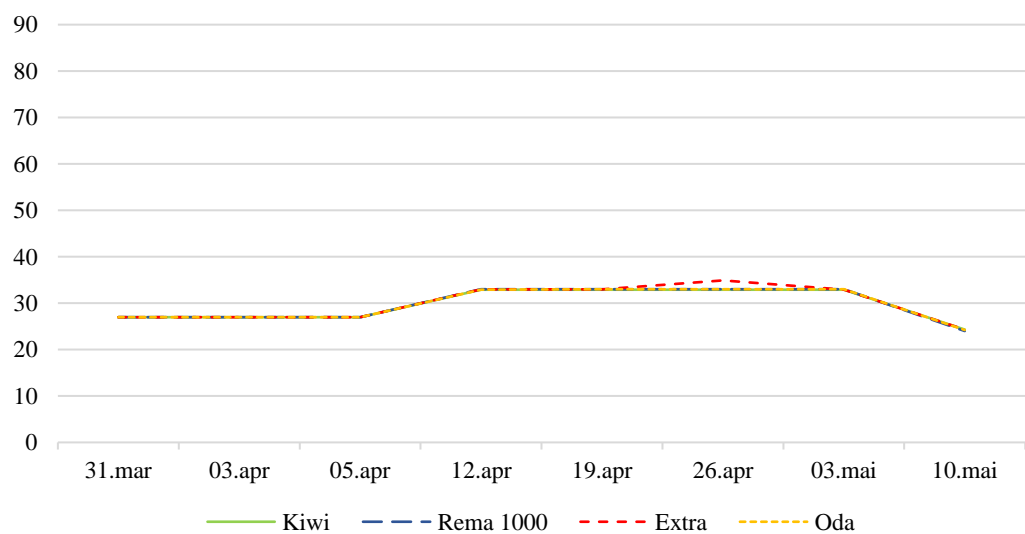
Gilde Grillpølser 10-pack price/kg observations

Figure 13

Cheapest sausage price/kg private label observations

5.4 In-depth interview

5.4.1 Data quality of in-depth interview

5.4.1.1 Reliability

During an in-depth interview, the conversation guides the data collecting (Johannesen et al, 2017, p. 231). It is important to ensure the highest possible degree of reliability through the conduct of the interview. As a result, we were cautious not to ask leading questions. During the interview, neutrality was a focus, and follow-up questions were posed in response to the informant's answers. The transcribing was completed right after the interview. It is also necessary to describe how the data is obtained and the procedures involved (Johannessen et al., 2017, p. 231). It is easier for other researchers to understand how the analysis was carried out if it is described and detailed enough. Nonetheless, it is crucial to note that if the same research with the same questions were repeated at a later time, the results might have altered since the circumstances are no longer the same. These are factors that contribute to the research's reliability. When it comes to test-retest reliability, the findings would probably have been somewhat different if the interview had been conducted at a different time with the same interview guide and informant. If the same questions were asked to others in the same industry, they might have had a different view for instance due to cultural differences between the chains. Internal reliability is considered high to the extent that if others had followed the same interview guide, the results would probably be the same in total (Johannessen et al., 2017, p. 37).

5.4.1.2 Internal and external validity

In order to increase the validity of the in-depth interview, it was important to establish a relationship of trust with the informant. This was done by informing the informant of the study's objective and anonymity prior to the commencement of the interview. Furthermore, if there was a question prior to the interview, the informant could contact us by email or phone. The interview took approximately one hour, and the interviewers sat in quiet surroundings so that the informant would not be disturbed. We utilized a first-hand source for the interview since the informant possessed considerable responsibility in the company. This contributes to the internal validity of the research. However, we need to be aware that the informant might have been unwilling to answer some questions or did not tell the

truth. In terms of external validity, because the results pertain to a specific industry, it is difficult to conclude if our findings can be transferred (Johannessen et al., 2017, p. 233). However, price wars happen in other industries, and therefore we hope that the results will be possible to transfer in the future.

5.4.1.3 Verifiability

During the preparation of the interview guide, it was important that the questions were formulated objectively and not based on subjective opinions (Johannessen et al., 2017, p. 234). The use of existing literature, as well as the emphasis on being self-critical through the work, serves to increase verifiability.

5.4.2 Analysis of in-depth interview

Topics the interview encompassed were private labels, pricing, price changes, and price wars. The data was transcribed immediately following the interview to ensure that proper and important information was not missed. This was particularly important because no audio recordings were made. After the interview, the person who asked the informant read through the transcription to ensure the information was valid and correct any deficiencies. The interview was transcribed according to the subjects addressed to make the analysis and the interpretation of the results more manageable. The data was organized, reduced, and systematized into subjects (Johannessen et al., 2017, p. 161-169).

5.4.3 In-depth interview findings

The findings of the interview with an industry professional will be presented in the following section. Quotes from the interview have been translated into English because it was conducted in Norwegian. Therefore, translation inaccuracies may have occurred. However, a careful assessment has been made to ensure that the quotes are as accurate as possible. All quotes in Norwegian are provided in appendix K.

5.4.3.1 Private labels

According to the informant, private labels are extremely important for grocery chains. It provides the opportunity to differentiate itself from the competitors, as the grocery chains are otherwise comparable in several areas. All of the chains are supplied by significant individual providers such as Orkla and Tine. The informant states the following:

Private labels contribute to keeping prices low because we get the opportunity to set different prices on private labels because we avoid the expensive intermediary, and you also have the unique part of it (Informant, 2023).

According to our informant, the majority of private labels are less expensive compared to national brands. Additionally, private labels are produced at a lower cost. Customers can benefit from private labels since reduced transportation costs and development lead to lower prices in the store. Furthermore, he states that "it is important for our competition that we have these low-priced products" and that "overall, we are not earning more money on private labels, and we often lose because some customers choose the cheapest product" (Informant, 2023).

The informant says that bargaining power in the industry is differing due to different market shares. However, private labels can contribute to improving or equalizing bargaining power against suppliers. Certain brands in Norway have a near-complete market dominance and where there are few other alternatives. Such national brand products include Mills caviar and Mills mayonnaise. The informant elaborates further "if we didn't even have our private labels, we would have almost nothing to negotiate with in terms of the suppliers" (Informant, 2023).

5.4.3.2 Pricing
The informant was asked about how they established their product prices. Several factors influence this, including manufacturing costs, retail price, demand, and the importance of the item to the customer. Furthermore, competition and product sensitivity are underlined. The informant emphasizes that the customers are more price sensitive to certain products than others and think more about the price. Customers are aware of the price of common food products such as milk and bread, and there is little to go on regarding price elasticity. Other factors that are emphasized are the importance of beneficial marketing campaigns to attract customers. Moreover, the season influences the price. The informant states that "the price of the product in season is often artificially low" (Informant, 2023).

According to the informant, competitors in the grocery industry have different supplier agreements. Furthermore, the competitors are unaware of what the others are negotiating and conversely. Customer insight regarding what people

want and when they want it is utilized in collaboration with suppliers to develop campaigns and products that are priced properly. The competitors operate in the same way. The informant emphasizes that this is dependent on the season and that the seasons replace each other.

> During easter, everyone wants Solo and Kvikk Lunsj. People do not drink as much Solo at other times of the year. We do not sell as much Solo at other times of the year. Since everyone wants it, all the grocery chains must have the same (Informant, 2023).

According to the informant, it is the case that some competitors lose on certain items, whereas others do not due to different purchasing conditions. Furthermore, the informant was asked how certain prices remain steady whereas others vary significantly within the same product group. This is influenced by demand. Some products are more important to customers than others, and the items that customers are more interested in are utilized in advertising campaigns to attract people to the store. The informant illustrates beverages as an example, stating that customers frequently purchase Pepsi Max. The price of Pepsi Max is lower than it should be, and the price of another, less popular soft drink is raised to compensate for the loss. The informant continues "therefore, some categories are more expensive and price sensitive because customers do not think much about it" (Informant, 2023).

The informant further elaborates that the commodities that the grocery stores earn less money on, such as minced meat, sausages, and dinner solutions, are the only ones that sell. However, the products they earn more money on, such as hygiene products, have competitors such as Normal and Europris. As a result, the competition has become more demanding.

It was also questioned what factors decide whether commodities, other than regular seasonal products should be on sale. This can be arbitrary in certain circumstances; however, it is usually the gods that attract consumers to the store that determine.

> For example, there may be a surplus of a product in the market so the supply is high and thus a lower price can be set. The price is driven lower since the competitors follow, and we may also come and go below it again. Then the cycle has begun" (Informant, 2023).

Additionally, the informant claims that the low-price chains match each other prices as everyone wants to be the cheapest. The grocery chains benchmark against comparable chains. They additionally elaborate "supermarket follows supermarket. Low-price follows low-price" (Informant, 2023).

5.4.3.3 Price changes
The Norwegian Competition Authority has an ongoing investigation examining if there is illegal pricing collusion between the grocery chains. The informant says that they utilize price trackers who are out in the store constantly checking the prices. They do not consider this to be cooperation and emphasize that the prices are available to everyone. Additionally, "we are completely dependent on following along, otherwise, you have no chance" (Informant, 2023). The informant elaborated on how price trackers work:

> Price trackers carry a device that registers prices that go straight into our computer system. We send them out to various stores with a list of items that are important. The person goes through a store and enters the prices of these items. This is forwarded to us centrally and we then compare the price of the product with competitors and with the prices we have. We constantly consider whether we should match the price, set the price lower or do we already operate with a lower price. We have to consider what is most important to have a low price on (Informant, 2023).

It is not always the case that competitors follow each other on price cuts. There are cases where you would rather set tactical prices and focus on other areas instead. The informant mentions VGs matbørs and how the grocery chains desire to be the winner. However, according to the informant, people notice the exchange, but prices are verified by the consumers themselves. Customers are price vigilant and search for special deals since they are aware that prices fluctuate. Nonetheless, the importance of the exchange's marketing influence is highlighted, and the retailers who win take full advantage of it. However, grocery chains can follow each other fast. This is feasible because the prices are electronic and can be readily adjusted on a computer. This task was more challenging when the prices were on price tags.

> Sometimes we use a longer time and consider whether it is tactically correct. We consider if we should follow up on the particular item or if we

should lower the price of another product that is more important to the customer (Informant, 2023).

The interviewer also inquired about what happens if the competitors increase the price instead. The informant stated that it is dependent on the circumstances. If one of the competitors increases, whereas the other remains at the same level, they make an evaluation. Nonetheless, if both competitors increase the price, then there is no point to be at a lower level when losing money on it. "However, price adjustments downwards occur more quickly as it is necessary to be involved". They elaborate: "if a competitor raises the price, it can be beneficial to delay for a while as well" (Informant, 2023).

The informant emphasized that they want to be ethical and that they do not increase prices before a campaign. They believe that it is unethical and not an appropriate business strategy.

5.4.3.4 Price war

Price war is an industry term and a term created by the media. The media labels it a price war and decides whether or not one will occur. The media defines a price war with marsipangris (marzipan shaped as a pig) at NOK 5. The threshold for the media to call it a price war is becoming lower and lower. We do not consider this to be a price war. For us, it is important to ensure that you are competitive, however, this results in certain items being sold at extremely low prices (Informant, 2023).

In the grocery retail industry, a price war often begins with the establishment of a product price. These are often products that are significant to customers. Then a competitor decides to lower the price and the trend emerges. During seasons and a price war, the chains are aware that a new VG food exchange may be on the horizon. The informant emphasizes one more time that pricing wars normally begin in the media when they write about the products and increase customer awareness.

The informant was questioned about their experiences of a price war. It was then emphasized that a price war is resource-intensive, time-consuming, and not necessarily beneficial to customers. Further, they must operate businesses, invest, and pay salaries. The informant adds that if the price of some products

decreases, the prices of other items must be adjusted. "The total shopping basket of the year does not necessarily improve with to low-prices on products you do not really need – how many marsipangriser do you need?" (Informant, 2023).

The informant also highlights the strike that took place earlier this spring where customers hoarded Ringnes bears because the brewery company said they would soon be empty. Their experience was that suddenly all the customers bought this type of beer, notwithstanding that they offer a variety of others. Additionally, "there are some mechanisms that tick in with customers" (Informant, 2023).

According to the informant, you can operate at a loss for a while; however, customers are the most damaging to lose during a price war. The density of grocery stores in the country is high, as a result, customers relocate on the basis of prices. Furthermore, the barrier for customers to switch retailers is minimal. Nonetheless, it is claimed that in their experience, some consumers remain loyal and are not influenced to the same extent. They state that "price perception and how one experiences price is more important than what the prices actually are" (Informant, 2023).

Finally, the informant was questioned on the customer side of the price war. Customers purchase more units of price war items than normal, according to their experience. It is additionally stated that customers are more price-conscious than in a long time and that they act as campaign hunters. Customers are purchasing more frequently, albeit fewer items. They visit the grocery store to purchase what is on discount before passing to the next store and doing the same there. In this case, the informant emphasized the importance of private labels, describing the pattern in which more consumers purchase what is cheapest.

From the retailer's perspective, there is increased dissatisfaction among customers because price wars results in empty shelves. According to the informant, consumers feel fooled as a result, however, this is connected to that certain customers purchase large quantities. Furthermore, "consumption increases more of the goods from which it is hoarded" (Informant, 2023)

5.5 Hypotheses

As elaborated in the cluster analysis, hypothesis 2, hypothesis 3, hypothesis 4, and hypothesis 5 are statistically supported by our analyses. Because the construct for skepticism was not valid, there was no foundation for assessing if hypothesis 6

can be statistically rejected or supported. When it comes to hypothesis 1, our findings indicate that the hypothesis "price changes have an effect on Norwegian grocery consumers during a price war" can be supported. According to our price tracker results, the chains adjust their prices up and down continuously. Customers prefer to pay the lowest price, therefore the opportunity to purchase waffles for NOK 4.80 is advantageous. However, a question to be raised is whether it is beneficial for the customer that prices drastically decrease for a short period of time before they are increased again.

Our findings also show that, although the private label is less expensive than the national brand, the grocery chains increase the prices of this as well. The objective of the private label is to be the chain's least expensive alternative for the customer. The question is whether the customers are aware that the price of these items is rising or whether the customer solely believes it is less expensive. The informant from the interview confirms that price wars make some customers hoard. At the same time, the informant acknowledged that it is not in the best interests of the consumer. Another finding from the interview is that the informant believes that customers are price conscious and are able to catch up with offerings. According to the survey results, one segment is more price-conscious and price sensitive than the other. However, based on the price fluctuations we have observed, it is difficult for a consumer to keep track.

6 Discussion

The following section presents a discussion of the research findings divided into private labels and national brands, consumers, and price trackers, as well as an examination of managerial implications.

6.1 Findings

The purpose of this research has been to gain a deeper understanding of the Norwegian grocery industry from the customer perspective, however, by observing the behavior of the retail chains. Norwegian grocery consumers are exposed to price wars that overlap each other and continuous price adjustments. Researchers have investigated price wars in other markets, however, there is a lack of such studies on the Norwegian grocery market. Based on previous price war research, this study attempts to contribute to a gap in the Norwegian grocery retail industry.

6.1.1 Private labels and national brands

Our findings from the survey show that the participants perceive national brands to have better taste and to be more accessible. Additionally, they are considered more expensive and of higher quality. Private labels are deemed to be inferior in taste, less available in product categories, less expensive, and of lesser quality. These findings support the previous research in the private label field. Customers seek affordable prices (Abril & Rodriguez-Cánovas, 2016), and the majority of the private labels are considered to be of lesser quality than comparable national brands (Boyle et al., 2018; Gabrielsen & Sørgård, 2007). From the industry perspective, it emerged from the interview that one of the advantages of private labels is that grocery chains avoid expensive intermediaries. The informant did not elaborate further. As a result, inquiries are in the aftermath asked regarding which costly intermediary is eliminated, as various national manufacturers produce private labels. Other findings from the interview are that private labels are crucial for grocery chains because they can differentiate themselves and are better suited to negotiations with suppliers. The informant emphasized that without private labels, they had considerably less to negotiate with. This is mainly because of the import restrictions. Our findings also reveal that grocery chains are favorable regarding private labels. However, issues are raised concerning whether what the informant claims are accurate or not.

The majority of private labels are priced lower than the comparable national brand in grocery stores. However, of the private labels products we observed, there was a price increase. A question to be raised if whether the consumers recognize these small price changes. During some of our observations, the private label and the national brand were positioned close to each other. As a result, it is possible that the customers then only discover that the price of the national brand is of higher price and do not observe that the private labels price has increased. Retailers might utilize private labels and national brands strategically in a price war to increase their private labels' strategic position compared to national brands (Sotgiu & Gielens, 2015). As several consider private labels of lesser quality, it is questionable whether it is fair to customers if the chains progressively increase the prices of private labels. Additionally, customers who are motivated to purchase the cheapest option might believe that purchasing the private label benefits them. However, if in the long term, customers purchase a

lower-quality product that simultaneously increases in price, it can be concluded that this is not to the advantage of the customer.

Another noteworthy finding from the price observations was that the prices of the private labels and national brands in a category followed one another. When the prices of national brands increased, the price of the private label in the same category increased relatively simultaneously. This is interesting because it would be reasonable for the chains to use their private labels to cover the loss from national brands' promotions. However, our observations suggest that this might not be the case. Another question this observation raise is whether the price wars affect the entire category, and not merely single products. On the other hand, this finding is consistent with the tolerance zone literature described earlier (Selnes & Lanseng, 2015).

6.1.2 Consumers

The results shows that it is feasible to divide our respondents into two distinct clusters. This might indicate that the population can be divided into two. One group of people that are less loyal because they are more price sensitive. The second group is less concerned with price and might be more exposed to paying for the price war as this cluster not only purchase promoted products. However, they might purchase those products the chains increase the prices of to cover for losses in a price war.

Our findings are consistent with Rao et al. (2000) that different customer segments have varying levels of price sensitivity. When price sensitivity is low, prices can fluctuate more without lowering sales volume than when price sensitivity is high (Silkoset, 2021, p. 32). The informant emphasized that customers are more price sensitive to certain products than others, and that the grocery chains have little to rely on in terms of price elasticity. Customers' reference price and tolerance zone influence the price elasticity (Hamilton & Chernev, 2013). We included such a product in our price tracker analyses to assess if the informant's statements could be confirmed. From the observations, milk was one of the few items that had little or no price adjustment. This indicates that products with high price elasticity are not traditional price war candidates. One probable explanation is that these items are necessities for the customers. However, the informant claimed that typical price war items are products important to customers. Our findings support Sotgiu and Gielens (2015), who

discovered that the brands included in a price war are not selected randomly. However, we did not include other typical necessity products that consumers have a high price sensitivity towards in the observations and the results might have been different consequently.

In addition to price, our findings shows that the consumers value broader assortment, location and longer opening hours the most when selecting grocery store. These findings are different from the standardized studies which indicated that location was the most important factor followed by promotions and member advantages. This entails some uncertainty as to which assets are the most important for the Norwegian consumers and require more research.

A question raised by the researchers is whether the conditions in the grocery market are consistent with the information provided by the informant. The Norwegian grocery market is characterized by homogenous products; however, the grocery chains can differentiate themselves through private labels and/or the above-mentioned elements. The results from the questionnaire and interview are consistent with the Bertrand theory that some customers are loyal regardless of price (Heil & Helsen, 2001; Sørgard, 2003, p. 67-68). Moreover, some customers are loyal regardless of the grocery store due to factors such as the variety of items or pleasant service. According to Gauri et al. (2008), some customers are loyal to their preferred retailer whereas others seek the best price and shift store accordingly. Price cuts might become ineffectual if customers are loyal to their brand (Heil & Helsen, 2001). According to the industry professional, some customers are loyal. However, they experience that customers easily transfer to the next store, with one of the reasons being Norway's high store density. Research show that the closer the distance between retailers, the more spatial pricing searchers there are. Additionally, when customers are close to the store, the frequency of store visits and temporal pricing changes increase (Gauri et al., 2008).

The price concerned cluster might be regarded as less loyal. These might be the same consumers as the industry professional described as the switching consumers. Additionally, the findings demonstrates that some Norwegian grocery consumers values additional factors other than price. Therefore, the low-price chains should not solely focus on being the least expensive, however, rather invest in the aforementioned factors to attract customers to the store and differentiate from competitors. This could contribute to establishing a consumer loyalty

connection, especially with the impulsive cluster, as well as attract the price concerned cluster with low prices. This is consistent with previous price literature (Nagle & Müller, 2017).

6.1.3 Price trackers

The price tracker analyses were conducted to investigate selected Easter campaign products such as Solo, oranges, and Kvikk Lunsj. Our findings demonstrate that the prices in the low-price grocery chains fluctuate during a price war in such a way that it can establish unrealistic reference prices (Heil & Helsen, 2001). The results shows that the price of certain products more than double within the weeks after the Easter price war and support Heil and Helsen (2001) who elaborate that price is a variable that can be quickly increased or decreased. Our findings additionally indicate that, as a result of the massive fluctuations in prices that are occurring, customers might struggle to keep up with the price changes.

The price tracker analyses clearly demonstrate that the chains follow each other. There is information asymmetry, and they utilize price trackers to gather information about competitors' prices. There are few major competitors, it is difficult for others to establish themselves on the market and it is easy to be replicated. However, the observations of Kvikk Lunsj shows an opposite result as Kiwi remained a higher price level than the competitors during the price war, despite the fact that we know the chains utilize price trackers. However, presumably there is a deliberate strategy behind the decision to not reduce prices more, and it would be interesting to gain insight into why.

The results from the interview show that the chains can more readily alter prices up and down due to electronic shelf pricing than in the past. A consequence of insufficient competition demonstrated through the interview, which indicates the consumer pays the price, is what the informant stated regarding various purchase conditions. In addition, some prices remain steady whereas others fluctuate significantly owing to demand. The informant used Pepsi Max as an example, stating that this is a high-demand product that is consequently priced lower than it should be. Other, less popular beverages are therefore priced higher to compensate for the loss. This might benefit consumers who favor Pepsi Max, however, disadvantageous for consumers who prefer less-demanded beverages.

The informant stated that the demand for Solo and Kvikk Lunsj is high during Easter and lower during the rest of the year. Based on our findings, it

might indicate that the grocery market is a created market. Additionally, the informant claims that the conditions during a price war are tense and that some consumers are hoarding. This was confirmed by our observations whereas both encountered bare shelves (appendix J) for products included in the price war. This contradicts the previous results that the respondents perceive themselves as not sales prone and indicate that the respondents might be unaware of the effects promotions entails.

6.1.4 Summary

To conclude, from the industry perspective, the low-price chains must follow the competitors' price decreases or else they will lose customers. Although it is necessary to investigate this further, our results show that the consumers are price sensitive and are prone to act on store promotions, regardless of their own perception. This is consistent with general consumer behavioral research whereas consumers do not know how they actually behave. For the low-price chains to ensure not losing customers, they are forced to participate in the price war. Our study indicates that the main reason why the low-price chains participate in price wars is to avoid being perceived as more expensive than the others. The fact is that all the low-price chains are equally inexpensive and that no matter which one the consumers select, they will be doing a good purchase compared to the other grocery chains in the market. Therefore, we conclude that price wars are about not losing the battle of being perceived as the cheapest in the minds of consumers.

The extensively low prices that can occur during a price war can be viewed as a benefit for the consumers in the short run. However, although this study has not investigated long-term effects of a price war, neither of our results contradict the findings by van Heerde et al. (2008). Although necessary to investigate further, it is reasonable to assume that the unrealistic prices create unrealistic reference prices for the consumers. Additionally, although we have not observed any concrete examples of increased prices on single products to compensate during the price war observations, this practice was confirmed by the informant. It can be argued that this is not in favor for the consumers as they can be deceived to purchase promoted groceries while paying higher prices for other goods that are not relevant for the specific season. Our findings also show that the consumers might struggle to follow the rapid price changes. Additionally, some consumers prefer private label and believe that it is beneficial as the cheaper

option. However, our results show that the prices of private labels also fluctuate with the price war and increase in accordance with the national brands, meaning that the total sum of the shopping cart increase after a price war independent of whether they purchase private labels or national brands. In total, this conclusion implies that the consumers are the ones who pays for price wars.

6.2 Managerial Implications

Based on the research findings, some managerial implications have been identified. Our research contributes to an overview of how price wars and price adjustments influence consumers Additionally, our research can provide insight into the behavior of Norwegian customers.

The aim of the study was to obtain a better understanding of price wars in the Norwegian grocery market and how it affects the consumers. From the questionnaire, it was found that it is possible to divide the respondents into two clusters, approximately equal. However, the differences in demographics for each of the clusters was limited and it is thus challenging to identify which customers belong to each particular cluster and to utilize the information provided from this research. However, the results can contribute to a better understanding of the consumers, including that some consumers are more price conscious and price sensitive than others.

The grocery chains believe that the competition is fierce. However, the market is characterized by three major competitors, substantial entry obstacles, import restrictions, and disparities in purchasing conditions (Wifstad, 2018). The price tracker analysis show that the chains follow each other, posing the question of whether tacit collaboration occurs through such as advertising campaigns. One conceivable outcome of the market's current structure is that one competitor might get to much market share. The analysis shows that approximately half of the respondents are not largely price conscious. In addition, the results indicate that there are attributes that are important when selecting a grocery store other than price. Thus, managers could benefit from devoting more attention and resources to other parts of the marketing mix.

7 Limitations and future research

This chapter presents a discussion of the research limitations as well as future research proposals. The most prominent limitations are the lack of generalizability of our findings to the population and the late start of the price observations.

7.1 Limitations

The chosen topic is extensive, and it can be examined from several perspectives. As a result, constraints have been imposed and our research has several limitations that need to be addressed. First, the unit of analysis was limited to the consumer side. The Norwegian grocery industry is characterized by secrecy and information that is not available to the general public. Throughout our work, we have had several questions that would be useful to get an answer to and that would strengthen the research findings. Additionally, the study has a time restriction and a limited budget. Nielsen Norway was approached with a request for secondary data. However, they do not provide such data to students. The desired data could be purchased, but it would be prohibitively expensive.

Through the observational data collection of the grocery store's behavior, there are several limitations. We had a limited budget, and the findings would have been more accurate if it had been possible to have a shopping list with several items purchased at each store. It is essential to guarantee that the shelf price corresponds to the cash register pricing, as it is the cash register price that customers must pay. Another limitation is simultaneity and precision, as emphasized by VGs matbørs. If we had been able to inspect the prices of each store precisely at the same time, our results would have been more reliable. Price adjustments might have occurred as the observers moved from one store to the next. However, our price tracker result indicate that the chains follow each other and therefore any adjustments might have occurred before the observations began.

Because the area of price tracker data gathering is limited to the county Viken, potential geographic variations in pricing are excluded. The grocery chains primarily operate with national prices, and we therefore believe that the results are still generalizable (Wifstad et al., 2018). Prices influenced by loyalty programs or other local offers have been disregarded. The observations were conducted over the course of a little more than a month. In retrospect, it could have been useful to begin earlier in order to observe the price adjustments that occur on 1 February at the grocery chains as Kiwi decided not to increase prices (Molland, 2023b). It was

also decided shortly before Easter that observation would be utilized, thus it was crucial to start the data gathering before the price war began in full force. In retrospect, including more products, particularly more products for comparing private labels and national brands would have been useful for our research. Lastly, it was necessary to modify, include or exclude certain products during the data gathering. If we had started earlier, it would been possible to conduct a few tests to make the needed adjustments before conducting the observations. However, this was challenging as the objective was to examine price changes during a price war.

An in-depth interview was conducted, which provided valuable insight into answering the research question. However, for our findings it would have been useful to perform additional interviews. Firstly, it could have contributed to more insights. Secondly, the interview findings could be compared against the others to examine similarities. Because the objective of our study is to develop a holistic understanding, companies on the supplier side was also contacted, but no response was obtained. Lastly, there might be response error if the informant was unwilling to answer or did not tell the truth (Malhotra, 2020, p. 106). We were conscious about that when interpreting the results.

There are several constraints regarding the survey. The results obtained through a non-probability convenience sample are not generalizable to the population and the results obtained throughout this study may thus not be correct. This sampling technique is considered inappropriate for descriptive and causal market research, although it can be used in exploratory research. This sampling method can be utilized for pilot studies and work well for generating hypotheses, and insights, such as in master thesis (Malhotra, 2020, p. 361-363). Another implication is that the respondents might be unwilling or unable to provide the desired information. Additionally, they may not be aware of their motives for choosing specific brands or so. Since the survey was conducted online, it was impossible to control the respondent throughout the survey. As a result, there might have been a response error where the respondents have provided inaccurate answers (Malhotra, 2020, p. 104-193).

The survey has reached a larger geographic extent; however, it is constrained as most respondents live in eastern Norway. Therefore, Swedish trade can influence the survey results since the informants can buy groceries in Sweden. If the survey had reached nationwide, this could have been included as a variable.

Another limitation is that some people might prefer to purchase groceries at supermarkets in comparison to the low-price chains. As a result, this a question that should have been questioned in the survey. Moreover, a question regarding whether the respondent currently is or has been connected to the grocery industry should have been included, as this might influence how they respond. In terms of segmentation, a question regarding the income level of the respondent might have been beneficial. At the same time, this could result in fewer respondents. Household size is not included. Additionally, our research does not consider the consumer's perception of risk in their selection of grocery stores and groceries. Previous studies indicates that income level, education, employment status and household influence risk perception, and although part of our questionnaire, we have not measured the variable risk in our data collection. It would be interesting to examine the demographic characteristics and their relation to financial risk, psychological risk and social risk and the influence on choice of grocery store and store loyalty (Miranda et al., 2004).

Another limitation of this study is the small sample size. We were unable to obtain more answers, and unfortunately some responses were found to be incomplete as they did not answer the complete survey. However, as the objective of this research was to gain a deeper understanding, we believe our findings contribute to valuable insights. It seems that the majority of the incomplete answers are people that have clicked on the survey link, answered the first question before leaving and that Qualtrics have registered this. This might be because they perceived it to be time consuming. As a result, some participants were removed from the final data, decreasing the number of possible outcomes. This study utilized convenience non-probability sampling where respondents was recruited through friends, family, and social media, that might result in biases. We were able to obtain a diverse range of ages and genders, however, the sample is not statistically projectable to the population (Malhotra, 2020, p. 361).

7.2 Future research

As the focus of the research was limited to the customer side, the retail or the supplier side could have been examined as well. We opted for investigating how the price war affects customers, but some of the same study of how the price war impact the retail chains or suppliers would be possible to examine. Then our findings can be used for comparison. The research concentrated on the three low-

price chains Kiwi, Rema 1000 and Extra. Simultaneously, we opted to include the online grocery store Oda that competes with the other chains to be the cheapest. However, it would have been possible to conduct a study including all of the grocery chains. Future research might replicate our findings by investigating how a price war impacts customers in other industries such as sports or electronics. When the thesis work started, the original plan was to conduct research similar to van Herde et al. (2008) on the Norwegian grocery retail market. Future research with more resources may find it relevant to conduct a similar study using secondary data from Nielsen Norway. In addition, our findings indicate conflicting results compared to the literature when it comes to which attributes are important for consumers in choosing a grocery store and is thus relevant for further research.

Our price tracker analysis indicate that the chains monitor each other. Additionally, the informant confirmed that the grocery chains utilize price trackers. In the thesis, questions have been raised about whether the chains are cooperating tacitly, such as through advertising campaigns. The Norwegian grocery market have high entry barriers, with three major competitors and is protected by import protection. To a certain degree, questions regarding how these elements might influence the grocery industry and customers have been raised. Future research may be conducted to examine how these factors affect the competitive environment and the final consumer.

Private labels and national brands are covered in this study to get a comprehensive understanding of the research question *who pays for the price war.* Private labels are often less expensive than national brands. However, our findings also shows that the grocery chains increase the prices of private labels. The interview results indicate that several customers prefer to purchase the lowest price option available at the store. Our survey result shows that customers are divided in their preferences and other factors such as product variety impact the choice of grocery chain. Richardson et al. (1994) found that private labels have a low-quality image. However, also that previous studies revealed minimal correlation between price and quality. Future research might investigate customers perceptions of the growth of private labels and how they understand the pricing adjustments at deeper level than what was researched in this study. Additionally, a further investigation of whether the grocery chains utilize private labels to cover losses of promotions on national brands would be interesting. Also, research on

the price fluctuations within a category during price wars would also bring valuable insight to the field. In general, more price observations across multiple seasons categories and products can be of value as further research.

Due to the need of constraints, the media impact of the price war is excluded in this research. However, price wars frequently receive substantial media coverage and there is a gap in the literature regarding the examination of media as a trigger or contributor (van Heerde et al., 2015). One issue is that customers are not given the price tracker information from the companies, and it could therefore be claimed that the media serves an important part in communicating pricing information to consumers. van Herde et al. (2015) found that newspapers are an important factor when examining what consumers think about the price war. Additionally, possessing the lowest-priced shopping basket and winning VGs matbørs are deemed prestigious among retailers (Silkoset, 2021, p. 137-138). Future research could investigate consumers perception of the media in a price war.

References

Abril, C., & Rodriguez-Cánovas, B. (2016). Marketing mix effects on private labels brand equity. *European Journal of Management and Business Economics*, *25*(3), 168–175. https://doi.org/10.1016/j.redeen.2016.09.003

Aggarwal, P., & Cha, T. (1998). Asymmetric price competition and store vs national brand choice. *Journal of Product & Brand Management, 7*(3), 244–253

Alba, J. W., & Marmorstein, H. (1987). The Effects of Frequency Knowledge on Consumer Decision Making. *The Journal of Consumer Research*, *14*(1), 14–25. https://doi.org/10.1086/209089

Allen, T., & Seaton, J. (1999). *The Media of Conflict: War Reporting and Representations of Ethnic Violence*. Zed Books.

Aller Media. (2023). *Dagligvareundersøkelsen Q1 2023*. Aller Media Norway

Assael, H. (1990). *Marketing: Principles and Strategy*. Prentice Hall.

Auer, J., & Papies, D. (2020). Cross-price elasticities and their determinants: a meta-analysis and new empirical generalizations. *Journal of the Academy of Marketing Science*, *48*(3), 584–605. https://doi.org/10.1007/s11747-019-00642-0

Badgaiyan, Verma, A., & Dixit, S. (2016). Impulsive buying tendency: Measuring important relationships with a new perspective and an indigenous scale. *IIMB Management Review*, *28*(4), 186–199. https://doi.org/10.1016/j.iimb.2016.08.009

Bakeman, R., & Quera, V. (2011). *Sequential Analysis and Observational Methods for the Behavioral Sciences*. Cambridge University Press.

Baker, J., Grewal, D., & Parasuraman, A. (1994). The Influence of Store Environment on Quality Inferences and Store Image. *Journal of the Academy of Marketing Science*, *22*(4), 328–339. https://doi.org/10.1177/0092070394224002

Baltas, G. (1997). Determinants of store brand choice: A behavioral analysis. *Journal of Product & Brand Management*, *6*(5), 315–324. https://doi.org/10.1108/10610429710179480

Bao, Y., Bao, Y., & Sheng, S. (2011). Motivating purchase of private brands: Effects of store image, product signatureness, and quality variation. *Journal of Business Research*, *64*(2), 220–226. https://doi.org/10.1016/j.jbusres.2010.02.007

Bergès-Sennou, F., Bontems, P., & Réquillart, V. (2007). Economics of Private
    Labels: A Survey of Literature. *Journal of Agricultural & Food Industrial
    Organization*, *2*, 1-23. https://doi.org/10.2202/1542-0485.1037

Berkowitz, & Walton, J. R. (1980). Contextual Influences on Consumer Price
    Responses: An Experimental Analysis. *Journal of Marketing Research, 17*(3),
    349-358. https://doi.org/10.2307/3150533

Bertini, M. (2014). Price Wars and The Managers Who Start Them. *Business
    Strategy Review*, *25*(4), 52–55. https://doi.org/10.1111/j.1467-
    8616.2014.01122.x

BI. (2021). *Routines for student assignments.*
    https://portal.bi.no/en/exams/assignment-thesis/routines-for-students-who-are-
    processing-data-and-personal-data-in-student-assignments/

Bonfrer, A., & Chintagunta, P. K. (2004). Store Brands: Who Buys Them and
    What Happens to Retail Prices When They Are Introduced? *Review of
    Industrial Organization*, *24*(2), 195–218

Boyle, P. J., Kim, H., & Lathrop, E. S. (2018). The relationship between price and
    quality in durable product categories with private label brands. *Journal of
    Product & Brand Management*, *27*(6), 647–660.
    https://doi.org/10.1108/JPBM-09-2017-1590

Bredal, D. (1996). *Kampen om ditt daglige brød: Bak kulissene i
    dagligvarebransjen*. Schibsted.

Bugge, S. (2023). *Priskrig på påskemat*. https://www.vg.no/i/GM59Rm

Burton, S., Lichtenstein, D. R., Netemeyer, R. G., & Garretson, J. A. (1998). A
    Scale for Measuring Attitude toward Private Label Products and an
    Examination of its Psychological and Behavioral Correlates. *Journal of the
    Academy of Marketing Science*, *26*(4), 293–306.
    https://doi.org/10.1177/0092070398264003

Busse, M. (2002). Firm Financial Condition and Airline Price Wars. *The Rand
    Journal of Economics*, *33*(2), 298–318. https://doi.org/10.2307/3087435

Cardot, R., Boland, D., & Liozu, S. M. (2021). Factors that contribute to
    managers becoming engaged in unintentional price war. *Journal of Revenue
    and Pricing Management*, *20*(4), 410–419. https://doi.org/10.1057/s41272-021-
    00305-2

Coop.no. (n.d.-a). *Om Coop-Virksomheten*. COOP. https://coop.no/om-
    coop/virksomheten/

Coop.no. (n.d.-b). *Coop Virksomheten- Dette er Coop*. COOP. https://coop.no/om-coop/virksomheten/

Coop.no. (n.d.-c). *Coop Virksomheten*. COOP. https://coop.no/om-coop/virksomheten/

Cuneo, A., Milberg, S. J., Alarcon-del-Amo, M. del C., & Lopez-Belbeze, P. (2019). Private label and manufacturer brand choice in a new competitive reality: Strategic directions and the future of brands. *European Management Journal*, *37*(1), 117–128. https://doi.org/10.1016/j.emj.2018.05.003

Dickson, J., & Albaum, G. (1977). A Method for Developing Tailormade Semantic Differentials for Specific Marketing Content Areas. *Journal of Marketing Research, 14*(1), 87–91. https://doi.org/10.1177/002224377701400110

Dimitrieska, S., Koneska, L., Kozareva, K. G., & Teofilovska, J. (2017). The Power of Private Brands. *CBU International Conference Proceedings*, *5*, 114–119. https://doi.org/10.12955/cbup.v5.911

Dufwenberg, M., & Gneezy, U. (2000). Price competition and market concentration: An experimental study. *International Journal of Industrial Organization*, *18*(1), 7–22. https://doi.org/10.1016/S0167-7187(99)00031-4

Gaasland, I. (2020). *Kronikk: Konkurranse i dagligvaremarkedet? Da må vi snakke om importvernet*. www.dn.no. https://www.dn.no/samfunn/mat/landbruk/konkurranse/kronikk-konkurranse-i-dagligvaremarkedet-da-ma-vi-snakke-om-importvernet/2-1-767248

Gabrielsen, T. S., & Sørgard, L. (2007). Private labels, price rivalry, and public policy. *European Economic Review*, *51*(2), 403–424. https://doi.org/10.1016/j.euroecorev.2006.01.001

Gabrielsen, T. S., Steen, F., & Sørgard, L. (2001). *Private Label Entry as a Competitive Force? An analysis of price responses in the Norwegian food sector*. https://openaccess.nhh.no/nhh-xmlui/bitstream/handle/11250/165856/A51_01.pdf?sequence=1&isAllowed=y

Gabrielsen, T. S., Steen, F., Sørgard, L., & Vagstad, S. (2013). *Kjøpermakt i dagligvaresektoren*. Fornyings-, administrasjons- og kirkedepartementet. https://www.regjeringen.no/globalassets/upload/fad/vedlegg/konkurransepolitikk/kjopermakt.pdf

Gauri, D. K., Sudhir, K., & Talukdar, D. (2008). The Temporal and Spatial Dimensions of Price Search: Insights from Matching Household Survey and Purchase Data. *Journal of Marketing Research*, *45*(2), 226–240. https://doi.org/10.1509/jmkr.45.2.226

Gielens, K., Ma, Y., Namin, A., Sethuraman, R., Smith, R. J., Bachtel, R. C., & Jervis, S. (2021). The Future of Private Labels: Towards a Smart Private Label Strategy. *Journal of Retailing*, *97*(1), 99–115. https://doi.org/10.1016/j.jretai.2020.10.007

Goldsmith, R. E., Flynn, L. R., Goldsmith, E., & Stacey, E. C. (2010). Consumer attitudes and loyalty towards private brands. *International Journal of Consumer Studies*, *34*(3), 339–348. https://doi.org/10.1111/j.1470-6431.2009.00863.x

Gollop, F. M., & Roberts, M. J. (1979). Firm interdependence in oligopolistic markets. *Journal of Econometrics*, *10*(3), 313–331. https://doi.org/10.1016/0304-4076(79)90087-3

Graciola, A. P., De Toni, D., de Lima, V. Z., & Milan, G. S. (2018). Does price sensitivity and price level influence store price image and repurchase intention in retail markets? *Journal of Retailing and Consumer Services, 44*, 201–213. https://doi.org/10.1016/j.jretconser.2018.06.014

Gripsrud, G., Olsson, U. H., & Silkoset, R. (2017). *Metode og dataanalyse: Beslutningsstøtte for bedrifter ved bruk av JMP, Excel og SPSS* (3d edition). Cappelen Damm akademisk.

Hamilton R., & Chernev, A. (2013). Low Prices Are Just the Beginning: Price Image in Retail Management. *Journal of Marketing*, *77*(6), 1–20. https://doi.org/10.1509/jm.08.0204

Heil, O. P., & Helsen, K. (2001). Toward an understanding of price wars: Their nature and how they erupt. *International Journal of Research in Marketing*, *18*(1–2), 83–98. https://doi.org/10.1016/S0167-8116(01)00033-7

Ingvaldsen, R. (2020). *Alle taper på priskrig*. BI Business Review. https://www.bi.no/forskning/business-review/articles/2020/01/alle-taper-pa-priskrig/

Johannessen, A., Tufte, P.A., & Christoffersen, L. (2017). *Introduksjon til samfunnsvitenskapelig metode* (5th edition). Abstrakt forlag.

Jordheim, H. M., & Ro, H. J. M. (2022). *Kraftig prishopp på flere tusen Oda-varer*. https://e24.no/i/KnLEEE

Kalle, L.-C. (2023). *Prissmell på billigvarene: – Tar alle midler i bruk*. Nettavisen. https://www.nettavisen.no/5-95-1103043

Kalra, A., Rajiv, S., & Srinivasan, K. (1998). Response to Competitive Entry: A Rationale for Delayed Defensive Reaction. *Marketing Science, 17*(4), 380–405. https://doi.org/10.1287/mksc.17.4.380

Kalyanaram, G., & Winer, R. S. (2022). Behavioral Response to Price: Data-Based Insights and Future Research for Retailing. *Journal of Retailing, 98*(1), 46–70. https://doi.org/10.1016/j.jretai.2022.02.009

Keller, K. O., Dekimpe, M. G., & Geyskens, I. (2016). Let Your Banner Wave? Antecedents and Performance Implications of Retailers' Private-Label Branding Strategies. *Journal of Marketing*, *80*(4), 1–19. https://doi.org/10.1509/jm.15.0154

Kleppe, M. K., Halvorsen, M. T., & Solem, L. K. (2015). *Coop får kjøpe Ica-butikkene*. www.dn.no. https://www.dn.no/dagligvare/rema/coop/konkurransetilsynet/coop-far-kjope-ica-butikkene/1-1-5323634

Kongsnes, A. (2020). *Nortura frykter for hele industriens framtid*. Mat og Marked. https://matogmarked.no/nyheter/2020/nortura-frykter-for-hele-industriens-framtid

Konkurransetilsynet. (2015). *Coop får overta Ica Norge—Konkurransetilsynet*. Konkurransetilsynet. https://konkurransetilsynet.no/coop-far-overta-ica-norge/

Konkurransetilsynet. (2018). *Hva er ulovlig samarbeid? - Konkurransetilsynet*. https://konkurransetilsynet.no/hva-er-ulovlig-samarbeid/

Konkurransetilsynet. (2020). *Samarbeid kan ha ført til høyere dagligvarepriser—Konkurransetilsynet*. https://konkurransetilsynet.no/samarbeid-kan-ha-fort-til-hoyere-dagligvarepriser/

Konkurransetilsynet. (2022). *Konkurransetilsynets dagligvarerapport 2022*. https://konkurransetilsynet.no/wp-content/uploads/2022/12/Konkurransetilsynets-dagligvarerapport-2022.pdf

Krämer, A., Jung, M., & Burgartz, T. (2016). A Small Step from Price Competition to Price War: Understanding Causes, Effects and Possible Countermeasures. *International Business Research, 9*(3), 1-13.

Kreps, D. M., & Scheinkman, J. A. (1983). Quantity Precommitment and Bertrand Competition Yield Cournot Outcomes. *The Bell Journal of Economics*, *14*(2), 326–337. https://doi.org/10.2307/3003636

Kukar-Kinney, M., Xia, L., & B. Monroe, K. (2011). When a promotion is denied: The effects of decision stage on perceptions of promotion and price fairness. *Economic and Business Review*, *13*(3). https://doi.org/10.15458/2335-4216.1237

Landbruksdirektoratet. (n.d.). *Om import av landbruksvarer*. https://www.landbruksdirektoratet.no/nb/industri-og-handel/toll-og-import/import-av-landbruksvarer/om-import-av-landbruksvarer

Lichtenstein, D. R., Ridgway, N. M., & Netemeyer, R. G. (1993). Price Perceptions and Consumer Shopping Behavior: A Field Study. *Journal of Marketing Research*, *30*(2), 234-245. https://doi.org/10.2307/3172830

Lorch-Falch, S. (2016). *De villeste priskrigene*. https://e24.no/i/b54m6B

Malhotra, N. K. (2020). *Marketing research: An applied orientation* (7th edition). Pearson.

Miranda, M. J., Kónya, L., & Havrila, I. (2004). Shoppers' Satisfaction Levels Are Not the Only Key to Store Loyalty. *Marketing Intelligence & Planning*, *23*(2), 220–232. https://doi.org/10.1108/02634500510589958

Moflag, T. (2013). *Sjekker tusenvis av priser hver dag*. dinside.no. https://dinside.dagbladet.no/okonomi/sjekker-tusenvis-av-priser-hver-dag/61246376

Molland, E. (2023a). *Ekstremtall for Kiwi: Knuser konkurrentene*. Nettavisen. https://www.nettavisen.no/5-95-955743

Molland, E. (2023b). *Professor: – Bedre dagligvare-konkurranse i kommunistland enn i Norge*. Nettavisen. https://www.nettavisen.no/5-95-907630

Monroe, K. B., & Chapman, J. D. (1987). "Framing Effects on Buyers' Subjective Product Evaluations" *Advances in Consumer Research*, *14*, 193-197.

Moore, M., McGowan Kennedy, K., & Fairhurst, A. (2003). Cross-cultural equivalence of price perceptions between US and Polish consumers. *International Journal of Retail & Distribution Management*, *31*(5), 268–279. https://doi.org/10.1108/09590550310472433

Nagle, T. T., & Müller, G. (2017). *The Strategy and Tactics of Pricing: A Guide to Growing More Profitably* (6th edition). Routledge.

Ndlovu, S. G., & Heeralal, S. (2022). An investigation into marketing activities role on the purchase of private label brands: A systematic review of trends in literature. *International Journal of Research in Business and Social Science (2147- 4478)*, *11*(1), 33–41. https://doi.org/10.20525/ijrbs.v11i1.1580

Nettbutikk.bunnpris. (n.d.). *Om Bunnpris*. https://nettbutikk.bunnpris.no/staticcms.aspx?scid=1

NielsenIQ. (2022). *Norske dagligvarekjeder 2020- Nordmenns syn på de største dagligvarekjedene*. Nielsen Consumer LLC.

Norgesgruppen.no. (n.d.). *Dette er NorgesGruppen*. https://www.norgesgruppen.no/om-oss/om-oss-hjem/dette-er-norgesgruppen/

NOU 2011: 4. (2011). *Mat, makt og avmakt: om styrkeforholdene i verdikjeden for mat.*

NTB. (2020). *NorgesGruppen sier opp bransjenorm om prisinnhenting | NorgesGruppen.* https://kommunikasjon.ntb.no/pressemelding/norgesgruppen-sier-opp-bransjenorm-om-prisinnhenting?publisherId=89738&releaseId=17895292

Nyström, H., Tamsons, H., & Thams, R. (1975). An Experiment in Price Generalization and Discrimination. *Journal of Marketing Research*, *12*(2), 177-181. https://doi.org/10.2307/3150440

Oda.no. (n.d.-a). *Oda-Om oss*. Oda. https://oda.com/no/

Oda.no. (n.d.-b). *Gull i VGs julematbørs!* Oda. https://oda.com/no/k/459-vg-matbors/

Oslo Economics. (2015). *Virkninger av åpenhet om priser og vilkår: Om effekter av Forbrukerrådets prisportaler* (No. 39–2015). https://fil.forbrukerradet.no/wp-content/uploads/2015/12/Vedlegg-III-Rapport-OE-Virkninger-av-%C3%A5penhet-om-priser-og-vilk%C3%A5r.pdf

Pepall, L., Richards, D. J., & Norman, G. (2014). *Industrial organization: Contemporary theory and empirical applications* (5th edition). Wiley.

Pinkleton, B. E., & Austin, E. W. (2001). Individual Motivations, Perceived Media Importance, and Political Disaffection. *Political Communication, 18*(3), 321–334. https://doi.org/10.1080/10584600152400365

Qualtrics (2023). *Determining sample size: how to make sure you get the correct sample size*. https://www.qualtrics.com/experience-management/research/determine-sample-size/

Rao, A. R., Bergen, M. E., & Davis, S. (2000). How to Fight a Price War. *Harvard Business Review*, *78*(2), 107–116.

Regjeringen.no. (2020). *Importvernet for jordbruksvarer* [Redaksjonellartikkel]. Regjeringa.no; regjeringen.no. https://www.regjeringen.no/nn/tema/mat-fiske-og-landbruk/jordbruk/innsikt/handel-med-jordbruksprodukter/importvernet-for-jordbruksvarer/id2364459/

Rekdal, K. E. (2022). *Tall og Trender 2022: Handel- De viktigste tall og trender innen handel*. https://www.nhosh.no/tall-og-fakta/tall-og-trender/tall-og-trender-2022/tallogtrender2022/handel-tall-og-trender/

Rema.no. (n.d.-a). *Om REMA 1000 | Vår kultur, verdier og filosofi | Alltid lave priser*. REMA 1000. https://www.rema.no/om-oss/

Rema.no. (n.d.-b). *Franchise i REMA 1000*. REMA 1000.
https://www.rema.no/karriere/franchise/

Rhee, H., & Bell, D. R. (2002). The inter-store mobility of supermarket
shoppers. *Journal of Retailing*, *78*(4), 225–237. https://doi.org/10.1016/S0022-
4359(02)00099-4

Richardson, P. S., Dick, A. S., & Jain, A. K. (1994). Extrinsic and Intrinsic Cue
Effects on Perceptions of Store Brand Quality. *Journal of Marketing*, *58*(4),
28–36. https://doi.org/10.2307/1251914

Ridder, M. (2022, February 23). *Sweden: Market share of selected grocery
retailers 2020*. Statista. https://www.statista.com/statistics/565650/market-
share-of-selected-grocery-retailers-in-sweden/

Ritchie, J., & Lewis, J. (2003). *Qualitative Research Practice: A Guide for Social
Science Students and Researchers*. SAGE.

Rook, D. W., & Fisher, R. J. (1995). Normative Influences on Impulsive Buying
Behavior. *The Journal of Consumer Research*, *22*(3), 305–313.
https://doi.org/10.1086/209452

Roselius. (1971). Consumer Rankings of Risk Reduction Methods. *Journal of
Marketing, 35*(1), 56-61. https://doi.org/10.2307/1250565

Sama, R. (2019). Impact of Media Advertisements on Consumer Behaviour.
Journal of Creative Communications, *14*(1), 54–68.
https://doi.org/10.1177/0973258618822624

Schibsted. (2023). *Schibsted Befolkningsundersøkelse – Mai 2023*. Schibsted
Marketing Services.

Schunk, H. (1999). *The Evolution of Competitive Interaction*. Working Paper,
University of Mainz.

Selnes, F., & Lanseng, E. J. (2014). *Markedsføringsledelse med digitale verktøy*.
Gyldendal.

Sethuraman, R., Srinivasan, V., & Kim, D. (1999). Asymmetric and
Neighborhood Cross-Price Effects: Some Empirical Generalizations.
Marketing Science, 18(1), 23–41.

Silkoset, R. (2021). *Pris: en håndbok i prisbeslutninger*. Cappelen Akademisk.

Silkoset, R., Olsson. U.H., & Gripsrud, G. (2021). *Metode, dataanalyse og innsikt*
(2nd edition.). Cappelen Akademisk.

Sinha, I., Chandran, R., & Srinivasan, S. (1999). Consumer Evaluations of Price and Promotional Restrictions - *A Public Policy Perspective. Journal of Public Policy & Marketing, 18*(1), 37-51.

Skolgi, E., & Jenssen, T. B. (2016). *Utvalget av mat og drikke i norsk og svensk dagligvare -En analyse av sammenliknbare butikker* (No. 56/2016). https://www.norgesgruppen.no/globalassets/matbilder/menon.pdf

Sørgard, L. (2003). *Konkurransestrategi eksempler på anvendt mikroøkonomi* (2nd edition). Fagbokforl.

Sotgiu, F., & Gielens, K. (2015). Suppliers Caught in Supermarket Price Wars: Victims or Victors? Insights from a Dutch Price War. *Journal of Marketing Research*, *52*(6), 784–800. https://doi.org/10.1509/jmr.13.0180

Sprott, D. E., & Shimp, T. A. (2004). Using product sampling to augment the perceived quality of store brands. *Journal of Retailing*, *80*(4), 305–315. https://doi.org/10.1016/j.jretai.2004.10.006

Spulber, D. F. (1995). Bertrand Competition when Rivals' Costs are Unknown. *The Journal of Industrial Economics*, *43*(1), 1–11. https://doi.org/10.2307/2950422

Tirole, J. (1988). *The theory of industrial organization*. MIT Press.

Tremblay, C. H., & Tremblay, V. J. (2019). Oligopoly Games and The Cournot–Bertrand Model: A Survey. *Journal of Economic Surveys*, *33*(5), 1555–1577. https://doi.org/10.1111/joes.12336

Urbany, J. E., & Dickson, P. R. (1991). Competitive Price-Cutting Momentum and Pricing Reactions. *Marketing Letters*, *2*(4), 393–402. https://doi.org/10.1007/BF00664225

van Heerde, H. J., Gijsbrechts, E., & Pauwels, K. (2008). Winners and Losers in a Major Price War. *Journal of Marketing Research, 45*(5), 499–518. https://doi.org/10.1509/jmkr.45.5.499

Van Heerde, H. J., Gijsbrechts, E., & Pauwels, K. (2015). Fanning the Flames? How Media Coverage of a Price War Affects Retailers, Consumers, and Investors. *Journal of Marketing Research*, *52*(5), 674–693. https://doi.org/10.1509/jmr.13.0260

Wakefield, K. L., & Inman, J. J. (2003). Situational price sensitivity: The role of consumption occasion, social context and income. *Journal of Retailing, 79*(4), 199–212. https://doi.org/10.1016/j.jretai.2003.09.004
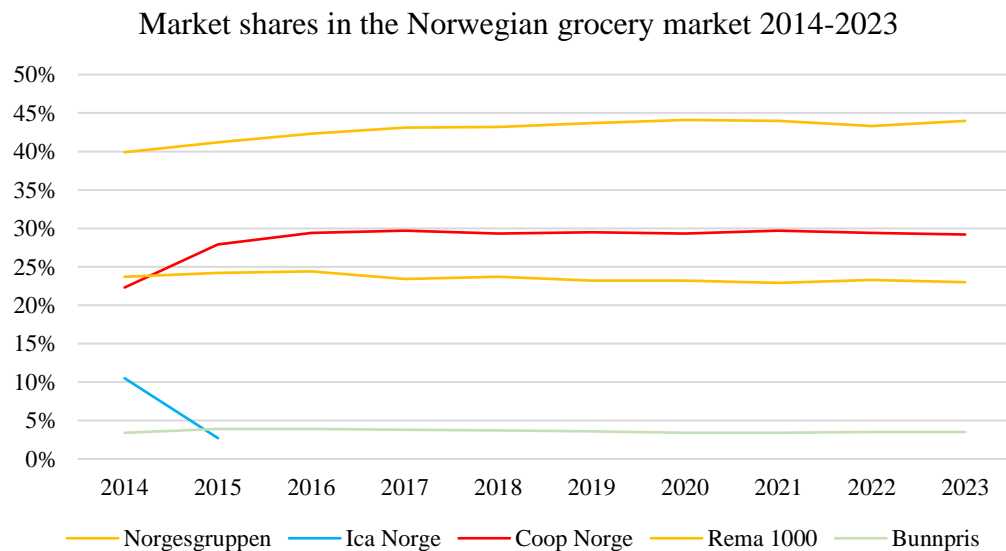
Wifstad, A. K., Jenssen, T. B., Eide, L. S., Grunfeld, L. A., & Skogli, E. (2018). *MENON-PUBLIKASJON NR. 33/2018*. https://www.menon.no/wp-content/uploads/2018-33-Konkurranse-i-dagligvare.pdf

Winningham, B. (1999). Private Label Grows Up. *Discount Merchandiser*, *39*(11), 109.

Wu, L., Yang, W., & Wu, J. (2021). Private label management: A literature review. *Journal of Business Research*, *125*, 368–384. https://doi.org/10.1016/j.jbusres.2020.12.032

Xia, L., & Monroe, K. B. (2017). It's not all about money: The role of identity in perceived fairness of targeted promotions. *Journal of Product & Brand Management*, *26*(3), 327–339. https://doi.org/10.1108/JPBM-05-2016-1196

Xia, L., Kukar-Kinney, M., & Monroe, K. B. (2010). Effects of Consumers' Efforts on Price and Promotion Fairness Perceptions. *Journal of Retailing*, *86*(1), 1–10. https://doi.org/10.1016/j.jretai.2009.10.003

Xiong, G., & Bharadwaj, S. (2013). Asymmetric Roles of Advertising and Marketing Capability in Financial Returns to News: Turning Bad into Good and Good into Great. *Journal of Marketing Research*, *50*(6), 706–724. https://doi.org/10.1509/jmr.12.0278

Yazdanparast, A., & Kukar-Kinney, M. (2023). The effect of product touch information and sale proneness on consumers' responses to price discounts. *Psychology & Marketing*, *40*(1), 146–168. https://doi.org/10.1002/mar.21755

Appendices

Appendix A: Market- and segment shares in the Norwegian grocery market

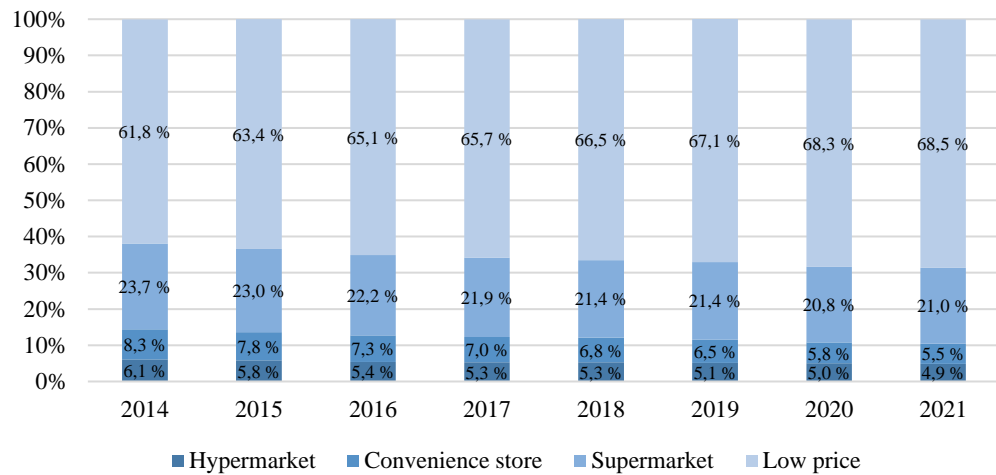### Market shares in the Norwegian grocery market 1994-2004
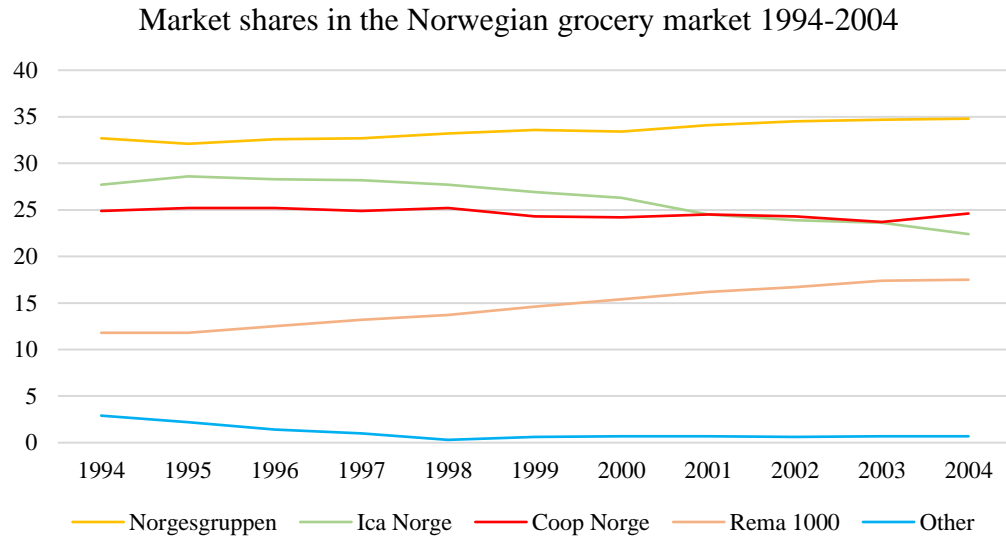
Source: Konkurransetilsynet. (2005). *Betaling for hylleplass: Virkninger for konkurransen i dagligvaremarkedet i Norge*. https://konkurransetilsynet.no/wp-content/uploads/2018/08/betaling-for-hylleplass.pdf
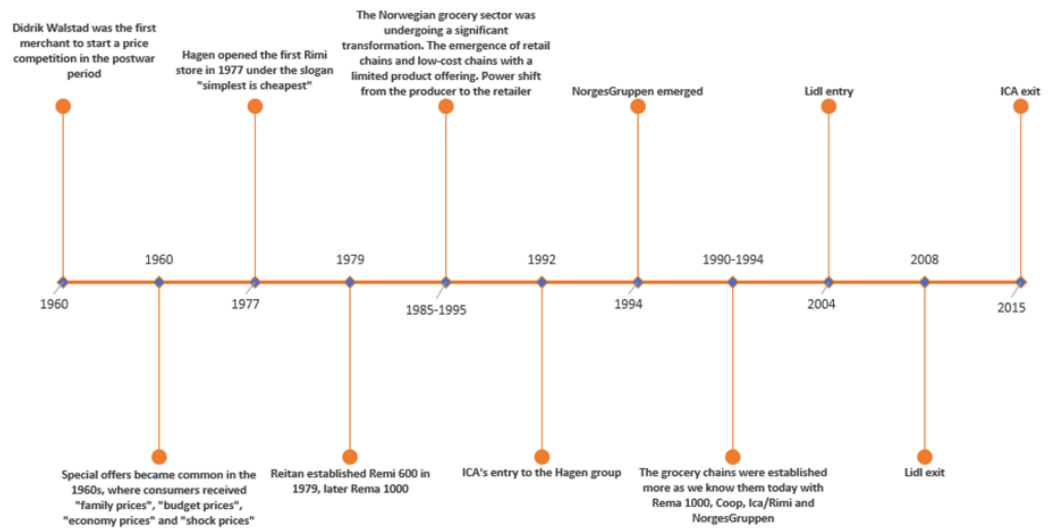
Market shares in the Norwegian grocery market 2014-2023

Sources: (2014-2021) https://www.nhosh.no/tall-og-fakta/tall-og-trender/tall-og-trender-2022/tallogtrender2022/handel-tall-og-trender/ *and*

(2022-2023) https://www.nettavisen.no/okonomi/ekstremtall-for-kiwi-knuser-konkurrentene/s/5-95-955743?fbclid=IwAR1reNYv6Eola33vl0uIpAkMIaUEXgoU7ld0AWkiX_qzbJR__RqtxlL5j4o

Segment shares in the Norwegian grocery market

	2014	2015	2016	2017	2018	2019	2020	2021
Low price	61,8 %	63,4 %	65,1 %	65,7 %	66,5 %	67,1 %	68,3 %	68,5 %
Supermarket	23,7 %	23,0 %	22,2 %	21,9 %	21,4 %	21,4 %	20,8 %	21,0 %
Convenience store	8,3 %	7,8 %	7,3 %	7,0 %	6,8 %	6,5 %	5,8 %	5,5 %
Hypermarket	6,1 %	5,8 %	5,4 %	5,3 %	5,3 %	5,1 %	5,0 %	4,9 %

■ Hypermarket   ■ Convenience store   ■ Supermarket   ■ Low price

Source: https://www.nhosh.no/tall-og-fakta/tall-og-trender/tall-og-trender-2022/tallogtrender2022/handel-tall-og-trender/

Timeline (above the line):

- **1960** — Didrik Walstad was the first merchant to start a price competition in the postwar period
- **1977** — Hagen opened the first Rimi store in 1977 under the slogan "simplest is cheapest"
- **1985-1995** — The Norwegian grocery sector was undergoing a significant transformation. The emergence of retail chains and low-cost chains with a limited product offering. Power shift from the producer to the retailer
- **1994** — NorgesGruppen emerged
- **2004** — Lidl entry
- **2015** — ICA exit

Timeline (year markers on the line): 1960, 1977, 1979, 1992, 1990-1994, 2008

Timeline (below the line):

- Special offers became common in the 1960s, where consumers received "family prices", "budget prices", "economy prices" and "shock prices"
- Reitan established Remi 600 in 1979, later Rema 1000
- ICA's entry to the Hagen group
- The grocery chains were established more as we know them today with Rema 1000, Coop, Ica/Rimi and NorgesGruppen
- Lidl exit

Sources: Bredal, D. (1996). *Kampen om ditt daglige brød: Bak kulissene i dagligvarebransjen.* Schibsted. *and* Sørgard, L. (2003). *Konkurransestrategi eksempler på anvendt mikroøkonomi* (2nd edition). Fagbokforl.

Page 85

Appendix B: Scale development

Questions	References
TEMPORAL PRICE SEARCH PROPENSITY	Gauri et al., 2008
Noen ganger utsetter jeg handleturen min for å vente på lavere priser	
Noen ganger utsetter jeg å handle en vare for å vente på en lavere pris	
Noen ganger kjøper jeg det jeg trenger over 2 eller 3 turer for å få de laveste prisene	
SPATIAL PRICE SEARCH PROPENSITY	Gauri et al., 2008
For å få de laveste prisene sammenligner jeg ofte prisene i to eller flere dagligvarebutikker	
For å få de laveste prisene handler jeg tilbudsvarer i flere butikker på samme handletur	
For å få de laveste prisene handler jeg ofte på 2 eller 3 forskjellige butikker	
SALES PRONENESS	Lichtenstein et al., 1993
Hvis en vare er på tilbud så er det en grunn for meg til å kjøpe den	
Hvis en vare er på tilbud kjøper jeg den framfor min favorittvare i samme kategori	
Hvis en vare er på tilbud er det mer sannsynlig at jeg kjøper den kontra varer som ikke er på tilbud	
PRICE SENSITIVITY	Wakefield & Inman, 2003
Jeg er villig til å gjøre en ekstra innsats for å finne lave priser hos dagligvarekjedene	
Jeg er villig til å endre på handlelisten for å dra nytte av gode tilbud jeg finner i butikken	
Jeg er opptatt av prisforskjeller i dagligvarebransjen	
IMPULSIVENESS	Badgaivan et al., 2016
Jeg kjøper ofte ting uten å tenke meg om	
Jeg kjøper noen ganger varer spontant fordi jeg har lyst til å prøve noe nytt	
Jeg kjøper det jeg vil ha, uten å tenke på konsekvenser	
SKEPTICISM TOWARDS STORE PROMOTION	Xia et al., 2010
Jeg tror dagligvarekjedene har tilbud for å gi kundene inntrykk av at de er billigere enn hva de faktisk er	
Jeg tror dagligvarekjedene ønsker høyere salg ved å gi kundene inntrykk av at de er billigere enn hva de faktisk er	
Jeg tror dagligvarekjedene har høyere priser enn de reklamerer med	

Appendix C: Survey

Block 1: Introduction

Hei,

Takk for at du tar deg tid til å delta i vår undersøkelse. Den gjennomføres i forbindelse med vår avsluttende masteroppgave ved Handelshøyskolen BI.

Undersøkelsen tar omtrent 10-12 minutter å gjennomføre. Noen av utsagnene kan virke like, men de er viktige for oss. Vi ber deg om å lese gjennom spørsmålene grundig og gi din ærlige mening. Dette vil være til stor verdi for vår masteroppgave.

Deltakelse er frivillig og undersøkelsen gjennomføres anonymt. Alle svarene vil bli behandlet med konfidensialitet og er kun tilgjengelige for de som står ansvarlige for undersøkelsen.

Ved spørsmål, ta kontakt med oss på e-post:

julie@kjf.no
caroline-bjornseth@hotmail.com

Tusen takk!

Jeg samtykker til at de innsamlede dataene fra undersøkelsen kan brukes i nevnte masteroppgave.

○ Ja
○ Nei

0% [_____] 100%

→

Block 2: Private label versus national brands

Egne merkevarer er merkevarer som dagligvarekjedene eier og kontrollerer selv. Noen eksempler er FirstPrice, Xtra, Prima, Jacobs Utvalgte, Eldorado, Änglamark og Kolonihagen.

Nasjonale merkevarer er kjente merker som alle kjedene tilbyr. Noen eksempler er Tine, Idun, Gilde, Maarud, Santa Maria, Lerum og Toro.

Jeg synes egne merkevarer som regel er

Dårlig kvalitet	○	○	○	○	○	God kvalitet
Høyt priset	○	○	○	○	○	Lavt priset
Dårligere kjøp	○	○	○	○	○	Bedre kjøp
Utilgjengelig i produktkategoriene jeg skal handle	○	○	○	○	○	Tilgjengelig i produktkategoriene jeg skal handle
Dårligere på smak	○	○	○	○	○	Bedre på smak

Jeg synes nasjonale merkevarer som regel er

Dårlig kvalitet	○	○	○	○	○	God kvalitet
Høyt priset	○	○	○	○	○	Lavt priset
Dårligere kjøp	○	○	○	○	○	Bedre kjøp
Utilgjengelig i produktkategoriene jeg skal handle	○	○	○	○	○	Tilgjengelig i produktkategoriene jeg skal handle
Dårligere på smak	○	○	○	○	○	Bedre på smak

0% ▬▬ 100%

→

Block 3: Attributes

I hvilken grad er følgende faktorer viktige for deg i valget av dagligvarekjede?

Lav priskonkurranse	○	○	○	○	○	Høy priskonkurranse
Lenger vei til butikken	○	○	○	○	○	Kortere vei til butikken
Færre tilbud	○	○	○	○	○	Flere tilbud
Færre medlemsfordeler	○	○	○	○	○	Flere medlemsfordeler
Mindre utvalg av frukt og grønt	○	○	○	○	○	Større utvalg av frukt og grønt
Færre parkeringsmuligheter	○	○	○	○	○	Flere parkeringsmuligheter
Lavere servicegrad	○	○	○	○	○	Høyere servicegrad
Begrenset vareutvalg	○	○	○	○	○	Større vareutvalg
Kortere åpningstider	○	○	○	○	○	Lengre åpningstider
Selvbetjente kasser	○	○	○	○	○	Betjente kasser
Mindre utvalg av allergivennlig/vegetar/vegansk mat	○	○	○	○	○	Større utvalg av allergivennlig/vegetar/vegansk mat
Standard produkter	○	○	○	○	○	Premium produkter
Større utvalg av egne merkevarer	○	○	○	○	○	Større utvalg av nasjonale merkevarer

0% ▬▬ 100%

→

Block 4: Price search propensity

Noen ganger...

	Svært uenig	Delvis uenig	Verken enig eller uenig	Delvis enig	Svært enig
...utsetter jeg handleturen min for å vente på lavere priser	○	○	○	○	○
...utsetter jeg å handle en vare for å vente på en lavere pris	○	○	○	○	○
...kjøper jeg det jeg trenger over 2 eller 3 turer for å få de laveste prisene	○	○	○	○	○

For å få de laveste prisene...

	Svært uenig	Delvis uenig	Verken enig eller uenig	Delvis enig	Svært enig
...sammenligner jeg ofte prisene i to eller flere dagligvarebutikker	○	○	○	○	○
...handler jeg tilbudsvarer i flere butikker på samme handletur	○	○	○	○	○
...handler jeg ofte på 2 eller 3 forskjellige butikker	○	○	○	○	○

0% 100%

Block 5: Sales proneness

Hvis en vare er på tilbud...

	Svært uenig	Delvis uenig	Verken enig eller uenig	Delvis enig	Svært enig
...så er det en grunn for meg til å kjøpe den	○	○	○	○	○
...kjøper jeg den framfor min favorittvare i samme kategori	○	○	○	○	○
... er det mer sannsynlig at jeg kjøper den kontra varer som ikke er på tilbud	○	○	○	○	○

0% 100%

→

Block 6: Price sensitivity

I hvilken grad er du enig eller uenig i følgende utsagn?

	Svært uenig	Delvis uenig	Verken enig eller uenig	Delvis enig	Svært enig
Jeg er villig til å gjøre en ekstra innsats for å finne lave priser hos dagligvarekjedene	○	○	○	○	○
Jeg er villig til å endre på handlelisten for å dra nytte av gode tilbud jeg finner i butikken	○	○	○	○	○
Jeg er opptatt av prisforskjeller i dagligvarebransjen	○	○	○	○	○

0% 100%

→

Block 7: Impulsiveness

Jeg kjøper...

	Svært uenig	Delvis uenig	Verken enig eller uenig	Delvis enig	Svært enig
...ofte ting uten å tenke meg om	○	○	○	○	○
...noen ganger varer spontant fordi jeg har lyst til å prøve noe nytt	○	○	○	○	○
...det jeg vil ha, uten å tenke på konsekvenser	○	○	○	○	○

0% ▬▬▬ 100%

→

Block 8: Skepticism towards store promotions

Jeg tror dagligvarekjedene...

	Svært uenig	Delvis uenig	Verken enig eller uenig	Delvis enig	Svært enig
...har tilbud for å gi kundene inntrykk av at de er billigere enn hva de faktisk er	○	○	○	○	○
...ønsker høyere salg ved å gi kundene inntrykk av at de er billigere enn hva de faktisk er	○	○	○	○	○
...har høyere priser enn de reklamerer med	○	○	○	○	○

0% ▬▬▬ 100%

→

Block 9: Loyalty

Hvor ofte handler du hos følgende dagligvarekjeder i løpet av en vanlig uke?

	Ikke tilgjengelig i mitt nærområde	Aldri	En gang i blant	En gang i uken	Flere ganger i uken	Hver dag
Meny	○	○	○	○	○	○
Extra	○	○	○	○	○	○
Matkroken	○	○	○	○	○	○
Coop Mega	○	○	○	○	○	○
Obs	○	○	○	○	○	○
Joker	○	○	○	○	○	○
Bunnpris	○	○	○	○	○	○
Eurospar	○	○	○	○	○	○
Kiwi	○	○	○	○	○	○
Oda	○	○	○	○	○	○
Rema 1000	○	○	○	○	○	○
Jacob's	○	○	○	○	○	○
Nærbutikken	○	○	○	○	○	○
Coop Marked	○	○	○	○	○	○
Spar	○	○	○	○	○	○
Coop Prix	○	○	○	○	○	○

Hva synes du skiller de ulike dagligvarekjedene fra hverandre?

Hva synes du skiller de ulike lavpriskjedene (Kiwi, Rema 1000, Extra og Oda) fra hverandre?

Hvilke av lavpriskjedene foretrekker du? Venligst fordel totalt 100 poeng på de følgende:

Oda	0
Extra	0
Kiwi	0
Rema 1000	0
Total	0

0% 100%

→

Page 91

Block 10: Price image

Hvilken av følgende lavpriskjeder oppfatter du som den billigste?

- ○ Kiwi
- ○ Rema 1000
- ○ Extra
- ○ Oda
- ○ Like billige
- ○ Vet ikke

0% � 100%

→

Block 11: Profiling variables

Hvilket kjønn identifiserer du deg som?

- ○ Kvinne
- ○ Mann
- ○ Ikke-binær
- ○ Ønsker ikke svare

Hvilken alder er du?

- ○ 0-17
- ○ 18-29
- ○ 30-39
- ○ 40-49
- ○ 50-59
- ○ 60-69
- ○ 70-79
- ○ 80+

Hva er postnummeret ditt? F.eks. 0154

Hva er din høyeste fullførte utdanning?

○ Grunnskole

○ Videregående

○ Årsstudium

○ Bachelorgrad

○ Mastergrad

○ Doktorgrad

○ Annet/Vet ikke

Hva er din arbeidsstatus?

○ Student

○ Deltidsjobb

○ Fulltidsjobb

○ Permittert

○ Pensjonert

○ Ufør

○ Arbeidsledig

○ Annet

0% ▮▮▮▮▮▮ 100%

→

Takk for at du tok deg tid til å delta i vår spørreundersøkelse!
Svarene dine er registrert.

0% ▮▮▮▮▮▮ 100%

Appendix D: Overview of monitored products

Categories	Products
Snacks	Kvikk Lunsj multipack price/kg
	Kvikk Lunsj (single)
	Freia Melkesjokolade
	Freia Påskeegg
	Maarud salt potatochips price/kg
	Cheapest salt potatochips price/kg private label
	Safari cookies
	Candy price/kg
Beverages	Solo 1,5 l 4x4-pack
	Solo 1,5 l
	Solo Super 1,5 l 4x4-pack
	Cola 1,5 l 4x4-pack
	Pepsi Max 1,5 l 4x4-pack
Fruit	Oranges price/kg
	Cucumber single
	Mini plum tomatoes 500 g
	Cherry tomatoes 250 g private label
	Broccoli single
	Banana price/kg private label
	Banana price/kg
Breakfast and related items	Cheapest orange juice 1,5 l private label
	Cheapest apple juice 1,5 l private label
	Prior Frokostegg 12-pack price/kg
	Cheapest eggs any size price/kg private label
	Mills Ekte Majones tube 160 g
	Mills Ekte Majones carton 330 g
	Cheapest mayonnaise price/kg private label
	Tine Lettmelk 1 % 1 l
Meat	Gilde Grillpølser 10-pack price/kg
	Gilde Grillpølser multipack price/kg
	Cheapest sausage price/kg private label
	Gilde Wienerpølser price/kg
	Cheapest wiener sausage price/kg private label
	Gilde Stjernebacon
	Hamburger frozen 8x100 g
Other	Toro Vafler
	Toro Vafler familysize
	Idun Ketchup without sugar
	Cheapest ketchup private label
	Buer Lomper (red)
	Cheapest potato pancake (lompe) private label
	Barilla Spaghetti 1 kg

Cheapest spaghetti 1 kg private label
Peppes Pizza sauce 180 g price/kg
Cheapest pizza sauce price/kg private label
Santa Maria Taco Sauce Medium price/kg
Cheapest taco sauce medium price/kg private label
Santa Maria Tortilla 6-pack large price/kg
Cheapest tortilla 6-pack large price/kg private label

Appendix E: Interview guide

INTERVJUGUIDE – Dagligvarekjedene

Introduksjon

- Hei og velkommen
- Tusen takk for at du tar deg tid til å prate med oss
- Beregnet tid er ca 45 minutter til 1 time
- Det er lov å trekke seg på et hvilket som helst tidspunkt
- Det er ingen riktige eller gale svar

Informasjon om informanten

1. Hvor lenge har du jobbet i dagligvarebransjen?
2. Hvilken tilknytning har du til den respektive lavpriskjeden i firmaet du jobber?

EMV

1. Omtrent hvor stor andel utgjør egne merkevarer av varene til lavpriskjeden deres?
2. I hvilken grad er egne merkevarer viktig for dagligvarekjedene?
   a. Hvorfor/hvorfor ikke?
3. Er fortjenesten høyere på egne merkevarer sammenlignet med nasjonale merkevarer?
   a. (Hvorfor er det ofte prisforskjeller i egne merkevarer og nasjonale merkevarer?)
4. Hvordan blir forhandlingsmakten mellom leverandør og dagligvarekjede påvirket av egne merkevarer?

Prissetting

5. Hvordan bestemmer dere prisene?
   a. (Hvem bestemmer prisene?)
   b. (Hvilke faktorer legges til grunn i prissettingen deres?)
6. Har dere og deres konkurrenter forskjellige avtaler med leverandørene?
   a. Hva er det som differensierer disse avtalene?
   b. Hvordan har det seg at prisene i butikkene er så like?
   c. Kan det ha seg at noen taper på visse varer mens andre ikke gjør det grunnet forskjellige innkjøpsbetingelser?
7. Hvordan kan det ha seg at noen priser holder seg stabile, mens andre varierer vesentlig innenfor samme varegruppe?
8. Utenom typiske sesongvarer, hva er det som avgjør hvilke varer som skal være tilbudsvarer?
   a. Matcher lavpriskjeden deres prisen på en vare om en konkurrent har tilbud på den?

        b.   Er det forskjell på om det er en lavpriskonkurrent kontra en av supermarkedene for eksempel?

Prisendringer

9. Hvordan overvåker dere prisene til konkurrentene?
        a.   (prisjegere, prisalgoritmer …) Hvordan fungerer det?
10. Hvilke faktorer avgjør om dere responderer på et priskutt?
        a.   Hvis dere reagerer, hvor lang tid tar det fra dere registrerer konkurrentens kutt til dere senker prisen(e)?
11. Hvordan reagerer dere dersom en konkurrent øker prisen på en vare?
        a.   (Hvilke faktorer avgjør om dere responderer på en prisøkning?)
        b.   Hvis dere reagerer, hvor lang tid tar det fra dere registrerer konkurrentens økning til dere endrer prisen(e)?

Priskrig

12. Hva legger dere i begrepet priskrig?
13. Kan du beskrive gangen i en priskrig fra start til slutt?
        a.   (Er det noen typiske kjennetegn i markedet i tiden før og etter en priskrig?)
14. Hvordan opplever dere priskriger? (bra/dårlig etc.)
15. Hvilke faktorer avgjør hvilke varer som er med i priskrigen?
        a.   Hvordan bestemmer dere prisene i en priskrig?
        b.   Hender det at prisene på priskrigvarer settes lavere enn marginalkostnaden?
16. Hvilke tap opplever dere på kort og lang sikt?
        a.   Hvordan dekkes eventuelle tap?
               i.   (Hender det at prisene på øvrige varer går opp i perioden for å dekke opp noe av tapet? (EMV mot nasjonale merkevarer))
17. Hvorfor deltar dere i priskriger?
        a.   Er deres inntrykk at dere må delta i priskrigen for å ikke miste kunder?
        b.   (Synes dere slik konkurranse er nødvendig eller unødvendig?)
18. Hvilke(n) gevinst(er) opplever dere på kort og lang sikt?
        a.   (Opplever dere å få flere lojale kunder?)
19. Hvilke tanker gjør dere rundt medias dekning av priskrig?
20. Vi undersøker også kundesiden av priskrigen - opplever dere at kundene handler flere enheter enn normalt av priskrigvarer?
21. Med priskrig og billigere varer kan det bli tomme hyller. Opplever dere mer misfornøyde kunder av dette?
22. Starter dere ofte priskriger?

Avslutning

- Er det noe du føler kan være interessant/relevant som vi ikke har snakket om?

Appendix F: Variable descriptives

Variable	Question	Min	Max	Mean	Std.dev
Temporal price search		**1**	**5**	**2.38**	**1.10**
	Sometimes				
	…I postpone my shopping trip to wait for lower prices	1	5	2.30	1.27
	…I put off buying an item to wait for a lower price	1	5	2.49	1.26
	…I buy what I need over 2 or 3 trips to get the lowest	1	5	2.35	1.29
Spatial price search		**1**	**5**	**2.7**	**1.26**
	To get the lowest prices				
	…I often compare prices in two or more grocery stores	1	5	2.87	1.48
	…I shop sales items in several stores on the same shopping trip	1	5	2.55	1.42
	…I often shop at 2 or 3 different stores	1	5	2.68	1.39
Price search		**1**	**5**	**2.54**	**1.09**
Sales proneness		**1**	**5**	**3.36**	**0.92**
	If an item is on sale				
	…then there is a reason for me to buy it	1	5	3.38	1.06
	…I buy it over my favorite item in the same category	1	5	2.99	1.28
	…am I more likely to buy it versus items that are not on sale	1	5	3.72	1.14
Price sensitivity		**1**	**5**	**3.43**	**1.00**
	I am willing to make an extra effort to find low prices at the grocery chains	1	5	3.05	1.17
	I am willing to change my shopping list to take advantage of good offers I find in the store	1	5	3.38	1.29
	I am concerned about price differences in the grocery industry	1	5	3.85	1.05
Impulsiveness		**1**	**5**	**3.20**	**0.99**
	I purchase				
	…often things without thinking	1	5	2.88	1.29
	…new groceries spontaneously sometimes because I want to try something new	1	5	3.67	1.08
	…what I want, without thinking about consequences	1	5	3.05	1.28
Skepticism towards store promotions		**1**	**5**	**3.67**	**0.82**
	I think the grocery chains				
	...have offers to give customers the impression that they are cheaper than what they actually are	1	5	3.86	0.96

...desire higher sales by giving customers the impression that they are cheaper than they actually are	1	5	3.95	0.87
...have higher prices than what they advertise	1	5	3.21	1.17

Appendix G: Dendrograms from Single Linkage, Average Linkage, and Ward's Method

Dendrogram using Single Linkage

Dendrogram using Average Linkage (Between Groups)

Dendrogram using Ward Linkage
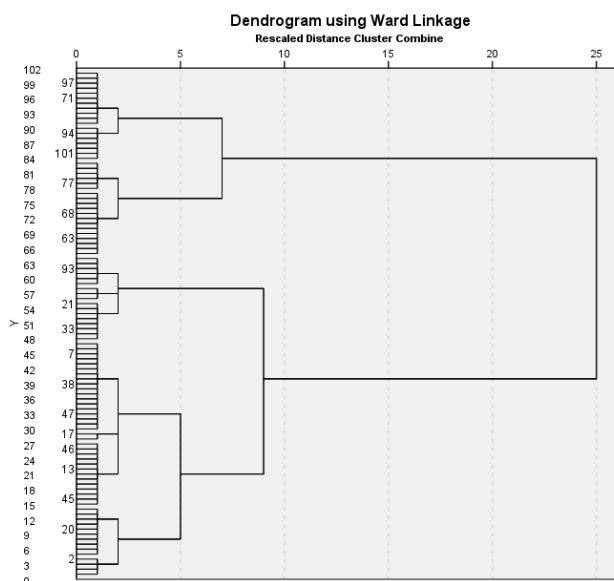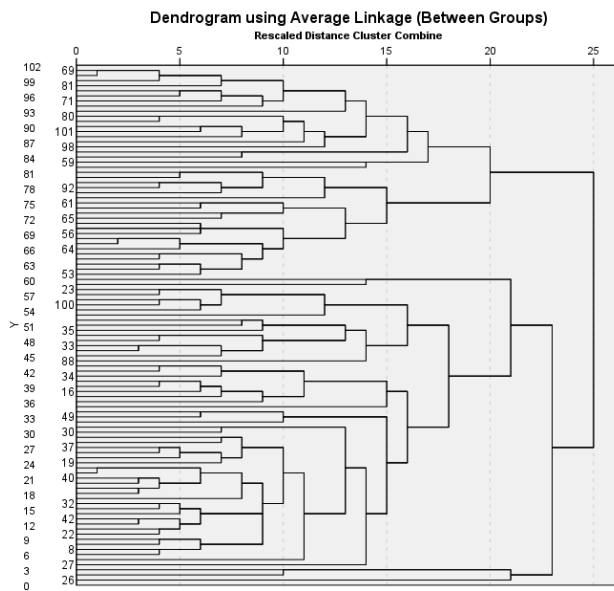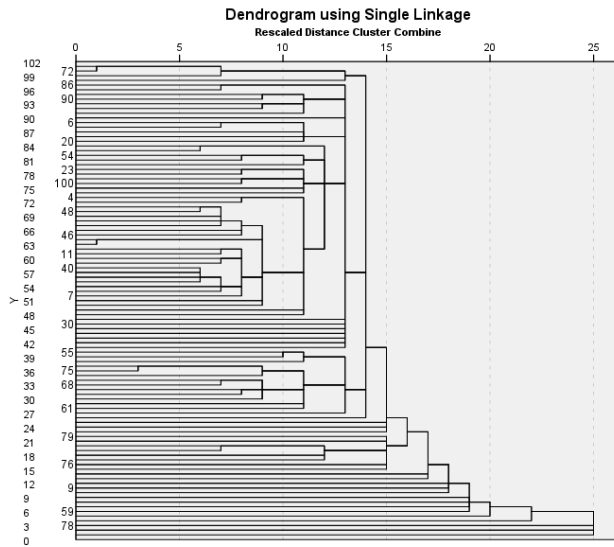
Appendix H: Overview of final and initial cluster centers

	Final cluster centers (means)		Initial cluster centers (means)	
	1	2	1	2
Price search	3,24	1,52	3,15	1,49
Sales proneness	3,77	2,77	3,68	2,81
Price sensitivity	3,97	2,63	3,89	2,63
Impulsiveness	2,80	3,79	2,78	3,94

Appendix I: Price observations

Differences in prices are marked in yellow.

Toro Vafler	24/3	29/3	31/3	3/4	5/4	12/4	19/4	26/4	3/5	10/5
Kiwi	20,1	4,8	4,8	20,9	20,9	20,9	20,9	20,9	20,9	20,4
Rema 1000	20,1	4,8	4,8	20,9	20,9	20,9	20,9	20,9	20,9	20,4
Extra	20,1	4,8	20,9	20,9	20,9	20,9	23,8	23,8	23,8	20,4
Oda	20,1	4,8	19,9	20,9	20,9	20,9	20,9	20,9	20,9	20,4
Oda (morning)			4,8	20,9	20,9	20,9	20,9	20,9	20,9	20,4

Oranges	24/3	29/3	31/3	3/4	5/4	12/4	19/4	26/4	3/5	10/5
Kiwi	14,9	14,9	14,9	14,9	14,9	29,9	32,9	32,9	32,9	34,9
Rema 1000	14,9	14,9	14,9	14,9	14,9	29,9	32,9	32,9	32,9	35,9
Extra	14,9	14,9	14,9	14,9	14,9	32,9	32,9	32,9	32,9	35,9

Kvikk Lunsj	24/3	29/3	31/3	3/4	5/4	12/4	19/4	26/4	3/5	10/5
Kiwi	205,7	141,8	105,0	105,0	105,0	247,5	247,5	247,5	247,5	247,5
Rema 1000	102,1	71,6	70,9	70,9	70,9	247,5	247,5	247,5	247,5	247,5
Extra	102,1	71,8	71,8	71,8	71,8	247,3	247,3	247,3	247,3	247,3
Oda	133,0	71,6	71,3	133,0	137,9	247,5	247,5	247,5	247,5	248,6

Tine Lettmelk	24/3	29/3	31/3	3/4	5/4	12/4	19/4	26/4	3/5	10/5
Kiwi	19,9	19,9	19,9	19,9	19,9	19,9	19,9	19,9	19,9	19,9
Rema 1000	19,9	19,9	19,9	19,9	19,9	19,9	19,9	19,9	19,9	19,9
Extra	19,9	19,9	19,9	19,9	19,9	19,9	19,9	19,9	19,9	19,9
Oda	19,9	19,9	19,9	19,9	19,9	19,9	20,0	19,9	19,9	20,2

Maarud Potetgull	24/3	29/3	31/3	3/4	5/4	12/4	19/4	26/4	3/5	10/5
Kiwi	116,3	116,3	116,3	116,3	116,3	116,3	116,3	116,3	116,3	116,3
Rema 1000	116,3	116,3	116,3	116,3	116,3	111,6	116,3	116,3	116,3	116,3
Extra	116,3	116,3	131,6	131,6	131,6	137,1	137,1	119,6	120,4	120,4
Oda	116,3	116,3	116,3	116,3	111,7	111,7	116,3	116,3	116,3	116,3

EMV Potetgull	24/3	29/3	31/3	3/4	5/4	12/4	19/4	26/4	3/5	10/5
Kiwi	71,0	71,0	83,0	83,0	83,0	83,0	83,0	83,0	83,0	83,0
Rema 1000	71,0	71,0	83,0	83,0	83,0	83,0	83,0	83,0	83,0	83,0
Extra	71,0	71,0	83,0	83,0	83,0	83,0	83,0	83,0	83,0	83,0
Oda	71,0	71,0	71,0	71,0	83,0	83,0	83,0	83,0	83,0	83,0

Buer Lomper	24/3	29/3	31/3	3/4	5/4	12/4	19/4	26/4	3/5	10/5
Kiwi	10,0	10,0	10,0	10,0	10,0	10,0	13,4	13,4	13,4	13,4
Rema 1000	10,0	10,0	10,0	10,0	10,0	10,0	10,0	10,0	10,0	10,0
Extra	10,0	10,0	12,9	12,9	12,9	12,9	13,4	13,4	10,0	13,4
Oda	10,0	10,0	12,4	10,0	10,0	10,0	10,0	13,4	13,4	10,1

Gilde Grillpølser	24/3	29/3	31/3	3/4	5/4	12/4	19/4	26/4	3/5	10/5
Kiwi	71,5	46,5	46,5	71,5	71,5	71,5	78,2	83,2	83,2	71,3
Rema 1000	71,5	46,5	46,5	71,5	71,5	71,5	78,2	83,2	83,2	71,3
Extra	71,5	46,5	71,5	71,5	71,5	71,5	78,2	83,2	83,2	71,3
Oda	71,5	46,5	46,5	71,5	71,5	71,5	78,2	83,2	83,2	71,3

EMV grillpølser	31/3	3/4	5/4	12/4	19/4	26/4	3/5	10/5
Kiwi	27,0	27,0	27,0	32,9	32,9	32,9	32,9	24,3
Rema 1000	27,0	27,0	27,0	33,0	33,0	33,0	33,0	24,0
Extra	27,0	27,0	27,0	33,0	33,0	34,9	32,9	24,3
Oda	27,0	27,0	27,0	32,9	33,0	33,0	33,0	24,2

Gilde bacon	24/3	29/3	31/3	3/4	5/4	12/4	19/4	26/4	3/5	10/5
Kiwi	27,8	27,8	27,8	35,7	27,8	27,8	32,9	32,9	32,9	24,3
Rema 1000	27,8	20,5	27,8	27,8	27,8	27,8	33,0	33,0	33,0	24,0
Extra	27,8	20,5	27,8	27,8	27,8	27,8	33,0	34,9	32,9	24,3
Oda	27,8	21,8	27,8	27,8	27,8	27,8	33,0	33,0	33,0	24,2

Appendix J: Price tracker pictures

Appendix K: Direct citations from in-depth interview

Norske sitater fra intervju:

«Egne merkevarer bidrar til å holde prisene nede fordi vi får muligheten til å sette andre priser på egne merkevarer fordi vi slipper det fordyrende mellomleddet også har man den unike delen av det».

«Viktig for konkurransen vår at vi har disse lavpris produktene».

«Totalt sett tjener ikke vi noe mer på egne merkevarer, ofte taper vi på at folk velger de aller billigste varene».

«Hadde vi ikke hatt egne merkevarer engang, så hadde vi nesten ikke hatt noe å forhandle med i forhold til leverandørene»

«Prisen på varen i sesong blir ofte kunstig lav».

«I påsken skal alle ha solo og kvikk lunsj. Folk drikker ikke så mye solo ellers i året. Selger ikke så mye solo ellers i året. Siden alle skal ha det, så må alle dagligvarekjedene ha det samme».

«Derfor er noen kategorier dyrere og mer prissensitive fordi kundene tenker ikke så mye over det»

«Eksempelvis, det kan være overskudd på en vare i markedet så tilgangen er høy og dermed kan man sette en lavere pris. Prisen blir presset siden konkurrentene følger, også kommer kanskje vi og går under det igjen. Da har man det gående.»

«Supermarked følger supermarked. Lavpris følger lavpris».

«Helt avhengig av å følge med, hvis ikke er man sjanseløse».

«Prisjegere har med seg et device som registrerer priser som går rett inn i datasystemet vårt. Vi sender de ut i ulike butikker med en liste over varer som er

viktige. Personen går gjennom en butikk og taster inn prisene på disse varene. Dette sendes videre inn til oss sentralt og så sammenligner vi pris på varen med konkurrent og med de prisene vi har. Vi vurderer hele tiden om vi skal matche prisen, sette prisen lavere eller har vi allerede lavere pris. Vi må tenke på hva det er viktigst å ha lav pris på.»

«Noen ganger bruker vi lenger tid og vurderer om det er taktisk riktig. Skal vi følge etter på den varen eller skal vi sette ned prisen på en annen vare som er viktigere for kunden»

«Men, prisjusteringer skjer raskere nedover siden det er nødvendig å være med på»

«Hvis en konkurrent setter prisen opp, kan det være fordelaktig å holde igjen en stund også»

«Priskrig er et bransjebegrep og et medieskapt begrep. Det er media som kaller det priskrig og som egentlig beslutter at nå skal det være priskrig. Media definerer priskrig med marsipangris til 5 kroner. Terskelen for at media skal kalle det priskrig blir bare lavere og lavere. Vi definerer ikke dette som priskrig. For oss er det viktig å sikre at man er konkurransedyktig, men noen ganger fører dette til at enkelte produkter selges til en veldig lav pris.»

«Den totale handlekurven på året blir ikke nødvendigvis bedre med lave priser på varer du egentlig ikke trenger – hvor mange marsipangriser trenger du?»

«Det er noen mekanismer som tikker inn hos kundene»

«Prispersepsjon og hvordan man opplever pris er viktigere enn hvordan prisene egentlig er»

«Forbruket øker mer av de varene som det hamstres av»