Tampere University of Applied Sciences



Price discrimination in seasonal business:

An analysis of consumer price sensitivity

Marika Päiväniemi

MASTER'S THESIS April 2019

Master's Degree in Business Administration International Business Management

ABSTRACT

Tampereen ammattikorkeakoulu Tampere University of Applied Sciences Master's Degree in Business Administration International Business Management

MARIKA PÄIVÄNIEMI Price discrimination in seasonal business: An analysis of consumer price sensitivity

Master's thesis 67 pages, appendices 4 pages April 2019

The purpose of this thesis was to find out how to use pricing as a tool to influence the demand in seasonal business. The theoretical part of this research focused on the consumers' willingness to pay and time as a part of pricing strategy.

Company X was used as a case company to be able to conduct the research in a business context. Company X operates in a seasonal, weather dependent business, selling consumer commodities. An online survey was done for one of the most sold products to find out consumer price sensitivity, and to determine whether purchase decisions could be influenced by price bundling instead of giving a direct discount for a single product.

The Van Westendorp price sensitivity method was used to find the optimal price range. Key results the range of acceptable prices, the optimal price point and the controlled use of these values to even out the demand. The results of the price sensitivity survey are analyzed within the theoretical framework.

The value of this thesis is monetary as maximizing profits in a very short selling period in seasonal business is crucial, and choosing the right price is one of the key drivers to success. Further research is required for wider product and service offerings, including the aspect of customer loyalty.

Key Words: Consumer behavior, pricing strategy, seasonal business, price sensitivity

CONTENTS

1	INTRODUCTION	8
	1.1 Thesis background	8
	1.2 Research topic	
	1.3 Research questions	
2	METHODOLOGY	12
	2.1 Qualitative and quantitative research approach	12
	2.2 Use of a case company	
	2.3 Van Westendorp price sensitivity meter	14
	2.4 Literature review	
	2.5 Reliability and validity	
3	THEORETICAL FRAMEWORK	
	3.1 Pricing methods	21
	3.1.1 Cost based pricing	21
	3.1.2 Competition based pricing	
	3.1.3 Value based pricing	
	3.1.4 Dynamic pricing	
	3.2 Key concepts	
	3.2.1 Reference price	
	3.2.2 Price sensitivity	
	3.2.3 Customer willingness to pay	
	3.2.4 Price discrimination	
	3.2.5 Price fairness	
	3.3 Psychology in pricing	
	3.3.1 Price reflects quality	
	3.3.2 Price bundling	
	3.3.3 Choosing the numbers	
	3.3.4 Price decoys	
4	PRICE SENSITIVITY ANALYSIS	
	4.1 Online survey	
	4.1.1 Importance of timing	41
	4.1.2 Framing of questions	41
	4.2 Use of an example product	
	4.3 Respondents' profiles	
	4.3.1 Geographical distribution	
	4.3.2 Age distribution	

4.4 Analysis of results	45
4.5 Generalisations	48
4.6 Alternatives for discounts	49
5 RESEARCH RESULTS	52
5.1 Strategic level – maximizing profits	52
5.2 Tactical level	53
5.2.1 Understanding price sensitivity	53
5.2.2 Discounting or bundling	54
5.3 Operational level	55
5.3.1 Seasonal price changes	55
5.3.2 Reframing the discount	56
6 DISCUSSION	57
REFERENCES	59
APPENDICES	
Appendix 1	64
Appendix 2	66
Appendix 3.	67

LIST OF FIGURES

1 Price improvement has the biggest influence on profit (Bouter 2013)	8
2 Research methods	12
3 Research analysis methods	13
4 The tripartite model (Daniel & Harland 2018)	18
5 Reference price (Somervuori 2018)	27
6 Classification framework for methods to measure willingness to pay (Breic	dert,
Hahsler & Reutterer 2006)	29
7 Responding to competitor price changes (Kotler & Armstrong 2018)	31
8 Comparison of High/Low pricing with everyday low pricing (Schindler 2012)) 34
9 Path diagram of integrative model results (Martin-Consuegra, Molina & Este	ban
2007)	35
10 Respondents' geographical distribution	44
11 Respondents' age distribution	44
12 Price sensitivity graph	47
13 Three different options for price bundling	50
14 Seasonal price changes (Schindler 2012)	56

LIST OF TABLES

1 Pricing process level chart (Bouter 2013, 155, modified)	20
2 Data work sheet	45
3 Comparison of answered prices between genders	49

ABBREVIATIONS AND TERMS

CWP	Customer willingness to pay
OPP	Optimal price point
PME	Point of marginal expensiveness
PMC	Point of marginal cheapness
IPP	Indifference price point
RAI	Range of acceptable pricing

1 INTRODUCTION

The research topic was chosen because of the personal interest of the author to develop pricing procedures and as a gap was perceived in the literature. The author was motivated to study pricing to become an expert in the field. This first chapter introduces the meaning of pricing as a research topic and presents the research questions. The methodology used and the results obtained will help to solve working life pricing problems.

1.1 Thesis background

The purpose of this thesis is to study pricing as a tool, which can be used to influence consumers purchase decisions. Pricing is the most powerful way to improve revenue (Bouter 2013). The impact of price is always bigger than that of other profit drivers, for example sales volume, fixed costs and variable costs.

Figure 1 shows a comparison of profit levels (Bouter 2013). This comparison has been made from the average economics of 2 463 companies in the Compustat North America aggregate.



FIGURE 1. Price improvement has the biggest influence on profit (Bouter 2013, 10, modified)

To be able to set optimal prices that lead to maximum profit and maximal number of products sold, a company has to understand its customers, competitors, economics and strategy.

A pricing strategy needs to take into account the time when the sales occur, demand, consumers' purchasing behaviour, and available products (Dolgui & Proth 2010). The time in this seasonal context can be the time of the year or even the time of the day or week. When planning a pricing strategy, a company should have the answers to the following questions suggested by Bertini and Ham (2013):

- 1) How sensitive is the consumer to the price of the product or service?
- 2) How does your price proposition compare to that of the competition?
- 3) How well do you understand the economics of your product and customers?
- 4) Is the price coherent and aligned with the company's competitive, product and consumer strategies?

According to Bouter (2013) pricing is a creative process and the art is about choosing the best pricing strategy. A company selling seasonal products or services to consumers faces an additional challenge in pricing, as it needs to match inventories to the uncertain demand and to the weather dependent sales.

If a company is selling seasonal high value commodities such as skies, green houses, tyres and other products dependent on seasonal weather changes, it should try to make sales as early as possibly by influencing the consumer to make purchase decisions in advance of the actual selling season. For these types of companies, it is very important to understand consumer behavior and the key concepts of pricing which can help them to make better pricing decisions.

Challenges related to high variations in demand are how to maximize sales and profit in a short selling period, and how to spread the demand as much as possible to utilize the capacity to serve customers in the most effective way.

1.2 Research topic

The research topic is price sensitivity in a dynamic pricing model. The research focuses on seasonal weather dependent business. A considerable amount of research exists on dynamic pricing for the air travel industry and other transport related businesses as well as for energy and farming industries. Price sensitivity in this research is about sensitivity in relation to the time of purchase.

Zauberman, Kim, Malkoc and Bettman (2009) have conducted research on the psychology of consumer behavior and discounting in time context. Their work is about time sensitivity on discounting. They have experimented with the differences between instant discounts or refunds that the consumers get after a longer period of time. Shi, Fung and Guo (2016) and You and Chen (2007) have researched pricing and purchasing seasonal goods. Their work is about optimal order quantity and how to define the selling price to maximize profits. The results of both studies show that a dynamic pricing model is the most profitable for seasonal goods.

As companies must maximize profits in a very short selling period in seasonal business, it is important to choose the right pricing strategy to be successful in pricing. The significance of this topic is considerable as it can have great monetary value for a company. The objective of this thesis is to give ideas on how to execute demand based pricing, hence, the approach to the topic is to study the impact of time as a part of the pricing strategy.

1.3 Research questions

The research question is: *How to use pricing as a tool to influence the demand of seasonal consumer commodities.* To answer this question a price sensitivity study on one product was made for Company X. The data is analyzed and placed into a theoretical framework.

This thesis examines how much lower the price should be, for the consumer to make the purchase decision earlier. If the company succeeds in influencing demand and making it more even, it helps to manage the capacity and inventory levels and in that way maximizes profits.

The purpose of this thesis is to learn how to do pricing in a systematic way, with the time dimension taken into account, in order to be able to influence demand and profit. Time of purchase should be one of the key drivers for pricing in seasonal business.

The research question is not discussed in the context of inventories, even though the inventory in seasonal business is one the key drivers for dynamic pricing. This work is limited to consumer behavior and psychology in pricing within the research question.

As a result of this thesis, the reader should be able to identify typical challenges in implementing a pricing strategy in seasonal business, the impacts of changing prices from a consumer point of view and from a profitability and company point of view.

2 METHODOLOGY

This thesis reviews existing theories and analyzes both qualitative and quantitative data. A case company is used in order to study the research question in a working life context and to acquire valid and reliable data. The results provide ideas and give insights for price sensitivity in seasonal business. The research culminates in embedding the theoretical framework into the analysis results in the fifth chapter. Selected research methods are described in this chapter.

2.1 Qualitative and quantitative research approach

A combination of qualitative and quantitative methods is used. The combination allows for studying the research questions in a broader context and enables more detailed results (Grbich 2013). The key concepts and theories of the research field are introduced first, and later they are used in the price sensitivity analysis. There is an interaction between the conceptual and empirical information.

Figure 2 shows how the **literature review** creates a theoretical framework for the price sensitivity analysis results from the **online survey**. The data collected from the online survey is both qualitative and quantitative and it is analyzed in a business context.



FIGURE 2. Research approach

The qualitative data is analyzed by using the Tripartite model (refer to 2.4.) created by Daniel and Harland (2018). This technique ensures the analysis is done in a consistent way and only the relevant data is processed. The quantitative data is analyzed by using Van Westendorp method (refer to 2.3.).

Figure 3 shows how the research is done with two main streams: The Tripartite model leading to the theoretical framework and the Van Westendorp price sensitivity meter leading to the analysis done based on collected data from the online survey. These are both analyzed in business context of the case Company (refer to 2.2).



FIGURE 3. Research analysis

2.2 Use of a case company

The advantage of using a case company is being able to utilize insights and knowledge of the business and real life pricing situations. The findings of the research can also contribute directly to the development of a new pricing process for the case company.

Due to the sensitivity of pricing as a topic, and to protect the company, the information given on Company X is very limited. Company X is a retail chain that operates globally in over 20 countries and has more than 1000 stores. The brand of the product, that the data is collected of, has the highest awareness among consumers in the product segment according to the consumer surveys done by the manufacturer of the product. The product in question is one of the top five most sold products of the company in its product category. The demand of the product depends very highly on seasonal sales peaks and that creates challenges for pricing.

The role of the case company in this thesis is significant because it makes possible a more in depth evaluation and allows for the study of particular phenomena such as consumer behavior driving price adjustments in seasonal business. Without a case company, it would have been difficult to get valid data from consumers in the online survey.

2.3 Van Westendorp price sensitivity meter

The research method for determining consumer price preferences from the data is Van Westendorp's price sensitivity meter. The meter is one of the price sensitivity methods used to measure the price sensitivity of consumers and, hence the consumers' perception of the value of a service or product. The method was created by Dutch economist Peter Van Westendorp in 1976 and is still one of the most popular methods. It is a direct method for defining customer willingness to pay. (Apollonsky 2017)

Quantitative analysis is needed to analyse the data acquired from the consumers in an online survey. An online survey was chosen to get the widest geographical sampling, maximum numbers of respondents and because of its cost efficiency. A result of the survey is a visualization of the range of prices that buyers are willing to pay for a product or service. In this analysis, a range of prices between the so called points of marginal cheapness and marginal expensiveness is used for evaluation of acceptable pricing.

The method was chosen because it is a simple method with only four questions and as a result the company can define the products optimal price range (OPR) and can utilize that price sensitivity information in demand based pricing decisions. An alternative for this method would be asking the consumers directly, *at what price would you buy?*

Van Westendorp's price sensitivity meter uses open questions combining price and quality. The method works by providing a survey to customers. In the survey, four price related questions are asked from customers in the following form or close to it (Apollonsky 2017):

- At what price would you consider the product to be so expensive that you would not consider buying it? (Too expensive)
- At what price would you consider the product to be priced so low that you would feel the quality could not be very good? (Too cheap)
- At what price would you consider the product starting to get expensive, so that it is not out of the question, but you would have to give some thought to buying it? (Expensive/High Side)
- At what price would you consider the product to be a bargain—a great buy for the money? (Cheap/Good Value)

Four important findings related with pricing can be obtained by this method. These are the optimal price point, the point of marginal expensiveness, the indifference price and the range of acceptable prices (Apollonsky 2017): 1) Point of marginal expensiveness (PME)

Price point above which cost is a serious concern, where it is felt that the product is too expensive for the value derived from it.

2) Optimal Price Point (OPP)

At this price point, the percentage of customers that feel the product is too expensive is the same as those who feel it is so low that the quality is questionable.

3) Indifference Price Point (IPP)

Point at which the same percentage of customers feel that the product is getting too expensive as those who feel it is at a bargain price. This is the point at which most customers are indifferent to the price.

4) Range of Acceptable Pricing (RAI)

The difference between the point of marginal cheapness and the point of marginal expansion.

Between the indifference price point and the optimal price point is the range of acceptable prices. The indifference price point is where the *Cheap/Good Value* and *Expensive/High Side* lines cross each other. This is the point at which fifty percentage of customers feel that it is a bargain price and an equal amount of respondents feel it is too expensive.

The optimal price point is the point where half of the respondents feel that the price is too expensive when compared with the quality of the product or service, which is where the *Too Cheap* and *Too Expensive* lines cross.

The analysis of survey data is not only quantitative but also qualitative as the fields in the survey were left open for comments. Due to the complexity of pricing in seasonal business, subjective interpretation of the content is used and systematic data analysing processes were needed to identify patterns (Daniel & Harland 2018, 98).

The systematic data analysis process was executed by utilizing different Excel formulas. The survey data is also used for searching new research issues and questions as qualitative research is flexible (Gibbs 2018) and comparisons and connections can be found from the data.

2.4 Literature review

The literature review consists mostly of recent pricing related journal articles by recognized researchers in the field but also of some general marketing and pricing books.

Perspectives reviewed extensively include those of Marco Bertini, Associate Professor and Department Head of marketing at ESADE Business School, Sunil Gupta, the Edward W. Carter Professor of Business Administration and Chair of the General Management Program at Harvard Business School and Luc Wathieu, Professor of Marketing, Georgetown University McDonough School of Business.

The literature is analyzed after searching and validating it by using a process with three stages (Daniel & Harland 2018). In the first stage (description), the key issues are identified, in the second stage (synthesis) the research problem is studied in the literature to find inconsistencies and in the third stage (critique) the literature is reviewed in a critical way to find new ideas and alternatives.

Figure 4 shows how the process flows from searching for valid articles, to validating them and to forming interconnections for the final review.



FIGURE 4. The tripartite model (Daniel & Harland 2018, 91, modified)

2.5 Reliability and validity

The qualitative approach is always subject to the researchers experience and reflections on the topic. It must be acknowledged that personal biases do exist (Daniel & Harland, 2018, 115). The literature review is limited to pricing with only very little direct consideration given to seasonal business.

On survey results, it must be acknowledged that sometimes the customers do not know the value of the product and they are not willing to pay for it accordingly (Caldwell 2012, 65). It should also be noticed that customers do not always answer honestly when asked their perception of price. According to Bouter (2013, 39), they tend to answer a lower price hoping that will influence the pricing, hence they would need to pay less.

In seasonal commodities, the timing of the survey influences the results. On the customer survey, data collection was done at a time of interest and not too far in advance of the peak season. If the survey had been done too far in advance, the respondents would not be interested in the products.

The reliability of the data in the survey has been checked and validated with a simple Excel formula. The number of responses was 1300 of which 632 were usable after validating the data, hence the effective total response rate was 48,6 %.

Some responses included data where the consumer had entered a larger value for their "too cheap" when compared with their value for "too expensive". The technical procedure to clean inconsistencies from the data was done using a formula in Excel. The formula was: =IF (AND(A1<=B1;B1<=C1;C1<=D1);"OK"; "NOT OK") This ensured that the subsequent answer was always greater than the previous one. All lines with the result "NOT OK" were left out of the analysis. Every respondent now has a valid answer for each question. Inter-relationships between the variables were then checked by using Pivot tables in excel and some relationships were found which will be discussed later in the results.

3 THEORETICAL FRAMEWORK

According to Bouter (2013) there are three process levels in executing pricing as table 1 demonstrates: Strategical, tactical and operational. This chapter is a literature review that introduces the main theories to each of the three levels. In the strategic level, this thesis focuses on dynamic pricing.

Key concepts of pricing are explored to be able to create the tactical level pricing processes. Utilizing psychology in pricing is needed for operational processes. The findings of the price sensitivity analysis from chapter four are embedded into this theoretical framework in chapter five.

1 Strategic	Pricing policy	Revenue model, price driver selection, basis of the price, use of price research, tactical and operational process design
	Price guidelines	Target price range, average price and price spread, price positioning, price seg- mentation and overall direction of price development
2 Tactical	Pricing structure	Gross price list (before any discounts)
	Discount structure	Discounts list and /or price promotion pol- icy
	Deal price policy	Guidelines for announced prices of indi- vidual transactions
3 Opera- tional	Price changes	Short-term changes in price and discount structure for specific elements
	Transaction prices	Net prices offered to customers (after discounts)

Process level

	1 Dricina	process	امريما	chart	(Routor	2013	155	modified	١
TADLE	т. пошу	process	level	Chart	(Douter	2013,	100,	mounieu)

3.1 Pricing methods

The most common pricing methods are cost based pricing, competition based pricing, value based pricing and dynamic pricing. According to Hinterhuber and Bertini (2011), several academic studies show that over 80 % of companies base their pricing either on costs or on the prices of their competitors. This thesis is focused on dynamic pricing in a seasonal business context as the research question is: How to use pricing as a tool to influence the demand of seasonal consumer commodities, and how should time be part of the pricing process.

3.1.1 Cost based pricing

Cost based pricing is made by adding wanted profit to the cost of the product. This is the simplest pricing method (Kotler & Armstrong 2018). The cost based pricing strategy includes break-even analysis and setting a target profit. According to Hinterhuber and Bertini (2011) profitability targets are the main inputs for cost based pricing decisions.

In cost based pricing the price is calculated from fixed and variable costs, and a target margin. If costs increase, the price needs to be increased. Usually sales volume is an estimate, so even this method does not guarantee covering costs or earning targeted profits. (Dholakia 2018)

The company's cost based price may be too high compared to a competitor's price if the competitor has lower costs. In some cases the consumer might be willing to pay more and then value based pricing would lead to greater profit. Cost based pricing usually creates trust in consumers and reduces price wars if most of the players in the specific industry use cost based pricing. (Dholakia 2018)

3.1.2 Competition based pricing

In competition based pricing the goal is not to match the competitor's prices but to set prices aligned with competitors' prices for products or services, based on the value of those for the customer. If the company is offering more value than the competitor is, the price is set higher in relation to the competitor prices (Kotler & Armstrong 2018). The selling price is synchronized with the competitor's price changes. This strategy is usually highly valued by sales people as prices are in line with the competition. In this strategy continuous discount giving is easily created when everyone is just matching prices with competitors. There can be also challenges with defining the market price and how to follow it. (Bouter 2013)

3.1.3 Value based pricing

Value based pricing is often preferred by companies that are market leaders. Those companies are confident they are better than their competitors are. The idea in value-based pricing is to price the product for a single customer segment by evaluating the customer value of the product compared to other products. (Dholakia 2015)

Value based pricing uses **customer willingness to pay** to make the pricing decisions. It is usually the most profitable pricing strategy (Hinterhuber & Bertini 2011). Customer willingness is one the key terms in pricing and chapter 3.2.3 explores it. Even if the pricing is value based, costs cannot be ignored as market and competitors' pricing decisions influence the result (Dholakia 2015, Smith & Nagle 1994).

3.1.4 Dynamic pricing

Dynamic pricing can also be called as demand based pricing. The airlines introduced dynamic pricing ten years ago. Before that, value based pricing was seen as the most profitable pricing strategy. For the airlines, dynamic pricing is a business strategy that maximizes profits by adjusting product prices in real-time. If sales go well, prices increase in order to have products available for potential customers who are coming later, and who are willing to pay more. (Lin & Sibdari 2007)

Dynamic pricing is **price discrimination** by the time of purchase. Today it is common in many fields of business, not only airlines (Netessine 2004). Dynamic pricing can also be individual level price discrimination (Haws & Bearden 2006). Some customers are willing to pay more than others are and dynamic pricing takes advantage of that. Mohammed (2017) questions if is it ethical as the individual prices might lead to **unfairness**, which is explored in chapter 3.2.5. The classical example is that the company is increasing the price of snow shovels on the day when it snows, which is not acceptable by consumers.

The objective in dynamic pricing is to forecast the customers and competitors behaviour in order to maximize profits. In this strategy, previous prices with consumer and competitor behaviours are analysed, as a company needs to take into account market factors (Dolgui & Proth 2010, Dholakia 2015). In a dynamic pricing model, the key is to find out how demand responds to changes in price. According to Dolgui and Proth (2010) this pricing strategy is usually used in time dated products (e.g. airplane tickets) or perishable items (e.g. fresh food).

Inventory decisions should be done in co-operation with pricing and vice versa as both of these operations give useful insight that should be utilized in decision making (Netessine 2004, Shen, Bao & Yu 2018). In seasonal business, the following questions should be studied carefully (Fu, Dan & Sun 2014):

- 1) How should the company determine the optimal consumer price and order quantity for seasonal products under weather sensitive demand?
- 2) How would the optimal price and order quantity change as the parameters (such as weather, inventory cost) change?

Companies need to have a process for defining the optimal time of price changes. There can be costs to price changes, such as administrative and marketing costs (Netessine 2004). Schindler (2012) has divided the time of purchase based pricing into four different categories:

- 1) Those that occur irregularly
- 2) Those that occur periodically
- 3) Those that involve making the purchase earlier than other customers
- 4) Those that involve making the purchase later than other customers

In some cases, it is a good idea to plan beforehand with regard to optimal price changes and their timing. In seasonal business, the yearly clock usually sets up the timeframe quite naturally.

Allocating discounts to different time periods can be used to gain attention but also to compensate for example for any inconvenience if such is expected to occur (Lambrecht & Tucker 2012). For example when a customer is not able to get the product at the time of need because there is no free capacity.

Typical response strategies to uneven demand are so called peak/off-peak time pricing or demand based pricing policies. As capacity is limited and the demand is uneven such pricing policies may be critical for competitiveness (Yuan & Hwarng 2016). When a company starts to price differently in peak times and off-peak times, according to Nagle and Hogan (2006), its average price decreases but the profit and return on capital invested will increase.

Also Nocke, Peitz and Rosar (2010) state in their research on advance purchase discounts as a **price discrimination** device that such pricing policy is profit maximizing. Lee and Ng (2001) show in their research that when companies start to utilize advance sales, capacity utilization and profits are higher even if the company gives advance discounts. Also Gao, Demirang & Cheng (2012) have investigated how taking advantage of early sales can reduce inventory costs and ordering costs and increases the profits throughout. Chapter 3.2.4. explores price discrimination as a tactical pricing method.

When demand is weather sensitive, early sales can prevent the major loss of sales if later weather conditions are unfavorable. The key challenge in such advance or off-peak selling is to offer discounts only to fill capacity that will not be used by full price purchasers (Schindler 2012). The key is to have data on consumer purchase behavior and to forecast the demand prior to making the pricing decisions. According to Simchi-Levi (2017), two of the biggest challenges in price optimizing are estimating lost sales due to stock outs and predicting demand for products that have no previous sales.

Gao, Demirag and Chen (2011) suggest that customers could make an early purchase and receive a refund in the normal selling season. In advance selling, the customer commits to the purchase, by for example making a booking and getting a discount price but the actual purchase is done later in the normal selling season. According to You and Chen (2007), the advance selling price is determined simultaneously with order quantity, the number of price settings and regular sales prices.

3.2 Key concepts

The literature review for key concepts explores theories that are needed to make tactical pricing processes. These are also the key elements that should be considered when planning pricing structures to influence demand.

3.2.1 Reference price

Companies should try to influence consumers' price perceptions. A company should not only have a plan for pricing, but also for the tactics that influence price perception, like loyalty or rewards programs.

Price perceptions influence how consumers form a reference price for a product or service. A reference price is the price that the consumer is willing to pay for a product or service. Most researchers suggest that consumers form the reference price from previous purchases. In the case that the purchase is done only very rarely or has not been done before at all, the consumers form the reference price at the time of purchase from the available prices.

Consumers might use any random brand as a reference price. In addition to brand, discounts influence the reference price (Kahn & Louie 1990, Briesch, Krishnamurthi, Mazumdar & Raj 1997). If a brand has continuous discounting, it may lower its reference price in the minds of consumers and have a negative impact on the effectiveness of the brands promotions (Han, Gupta & Lehmann 2001, Lee & Tsai 2013). The risk of promotions is that consumers postpone their purchase decisions in order to wait for a promotion (Aydinli, Bertini & Lambrecht 2014).

If a consumer makes the reference price within the company's prices, the order in which the prices are presented also has an influence on the mind of the consumer. Prices that consumers see first have the greatest influence. It should be carefully evaluated if the prices are in descending or ascending order. This is also called *top down* selling, showing the customers first prices that are above their price range. (Nagle & Hogan 2006)

Figure 5 shows that around the reference price there is an area (marked as 1) where the consumer will not response to the price changes, according to the research of Somervuori (2018). That area is +/- 5 % from the reference price. And around the reference price there is an area (marked as 2) where the price is acceptable. This defines the min and max value that customer is willing to pay.



FIGURE 5. Reference price (Somervuori 2018, 113, modified)

One good way to influence price perceptions is to have different roles for different product groups. For example, products that consumers are usually price sensitive to can be used to create traffic to the stores, and some other products can have the role of making the margins. (Heda, Mewborn & Caine 2017)

The research by Bornemann and Homburg (2011) suggests that time influences the price perceptions of consumers. They also suggest that when consumers are more focused on the **quality relationships to price** than the monetary sacrifice, it has a positive impact on the demand curve. Chapter 3.3.1. explores in more detail how price reflects quality.

If prices are changing too often, the customers no longer have a clear reference price and the buying decisions becomes complex (Dholakia 2015). This can have a negative effect on sales as consumers postpone the buying decision.

Emotions have a role in consumer behavior and in how consumers reflect on price. Because of emotions, consumers value a private label or a brand differently when forming a reference price. Brand products are seen as a secure and valuable choice and there is greater emotional involvement (Somervuori & Rajava 2013). According to Gupta and Carter (2014) brands allow companies to charge premium prices.

Customer service and customer experience can be a significant competitive advantage. Continuous price discounts on the other hand can damage the brand and erode profits (Bertini & Wathieu 2010).

3.2.2 Price sensitivity

According to Bertini and Ham (2013) companies have a better understanding of competitor prices than they do of their own customers: What is the value of the product for the customers, and how price sensitive are the customers?

Consumer price sensitivity evaluates the effect of changes in price. How important is the price to the consumer, and how does the consumer respond to price changes. It is important to evaluate the reaction of consumers to the price change. To understand that and to manage pricing decisions well, companies must understand the relationship between price fairness, customer satisfaction, loyalty and price acceptance (Martin-Consuegra, Molina & Esteban 2007).

Price sensitivity varies between industries. When a price change does not increase or decrease sales, the market is insensitive and if a price change has a big impact on the sales, the market is sensitive to price (Schindler 2012, 117). If price sensitivity measures consumer behaviour, then for a company it is also important to understand the price elasticity of products in order to be successful in pricing. Elasticity is usually a calculated estimate, as it is impossible to know what consumers will do at every price point of every product in the market (Gallo 2015). Some products are very elastic – small changes result in a large change in quantity demanded and some products are very inelastic – the quantity demanded does not change even if the price changes (Gallo 2015). Then there are products that are somewhere in between these two. Companies should use this information to try to move the products and services from the elastic to the inelastic. The consumers' willingness to pay can be increased, hence they become more insensitive.

Price promotions make consumers feel they are saving money. Price promotions guide purchase decisions and encourage trying new products. Consumers feel better after making a good deal. However, price promotions can increase price sensitivity and lower price expectations. (Lee & Tsai 2014)

3.2.3 Customer willingness to pay

Willingness to pay is the maximum price the consumer is willing to pay for a product or service. Not every consumer is willing to pay the same amount for the same product and that makes setting the right price difficult. There is evidence that consumers are willing to pay significantly different prices for identical products or services and the difference is growing all the time. (Bitran & Mondschein 1997)

There are several ways to measure the willingness to pay. Breidert, Hahsler and Reutterer (2006) have made a classification framework for the different methods. Figure 6 illustrates that information on willingness to pay can be acquired by observing the customers or making experiments (revealed preference). Alternatively, the data to measure willingness to pay can be acquired through direct surveys (stated preference) to the respondents. The Van Westendorp price sensitivity meter used in this thesis is such a method.



FIGURE 6. Classification framework for methods to measure willingness to pay (Breidert, Hahsler & Reutterer 2006, modified)

The value of the product influences customer willingness to pay. Customers do not often understand the value of the product, hence their willingness to pay can be lower than it would be if the company communicated better the value of the service or the product. This is especially crucial to companies offering premium products that are high value and price because if the company does not succeed in that it can be very vulnerable to competitors offering lower priced products. (Nagle & Hogan 2006)

Value communications, including advertising, personal communication, trial offers, recommendations, guarantees and other tools to support value, raise customers' willingness to pay, and in fact, the value based pricing process starts with mapping the customer needs because in that, the customer willingness to pay is defined and customer specific offerings can be made. (Hinterhuber & Bertini 2011)

Willingness to pay can be used in price discrimination by offering different options for the consumers, such as quantity discounts, bundling or pricing by time, when consumers have the opportunity to come at peak times with higher prices or offpeak times with lower prices as was discussed previously.

Figure 7 shows actions that a company should consider when a competitor cuts prices, rather than to following the competitors pricing (Kotler & Armstrong 2018). When planning price changes, the company should make scenarios on how the consumers might react to the changes (Bertini & Ham 2013).



FIGURE 7. Responding to competitor price changes (Kotler & Armstrong 2018, 345, modified)

Price changes make the buying decision more complex for the consumer (Dholakia 2015). Constant price changes also draw attention to the price and away from the product's features. Consumers usually make purchase decisions based on price and time. People value money more than time. For example if the product would be X slightly cheaper in another shop, but getting there to buy it would take one hour more, consumer is most likely willing to pay the asked price. Consumers are willing to take more risks when making purchase decisions with the possibility of losing a lot of money compared to losing a lot of time (Lee L, Lee M, Bertini, Zauberman & Ariely 2015).

3.2.4 Price discrimination

As was discussed in dynamic pricing, pricing by the time of purchase is also price discrimination. In price discrimination, customers are divided into segments that pay different prices. Prices vary based on the customer's willingness to pay (Bouter 2013). Hence, the customer's willingness to pay plays an important role in price discrimination.

According to Bertini and Koenigsberg (2014), most companies default to having one price and selling with that to anyone who is willing to pay that amount. If the same price is used for all customers, the company might lose some profit as some customers may value the products more and would willing to pay more and some that are willing to pay less are not sold to at all. A company should never give discounts to customers who are willing to pay the full price. (Bertini & Koenigsberg 2014)

In seasonal businesses, price discrimination can be used for example by offering early or late buyer discounts, to the consumers that are price-conscious. The price sensitive pensioners, unemployed or students can be offered a service time booking timeslots during those times of the day when there is most free capacity and the less price sensitive consumers who are not able to come during the day time can pay the normal price. There can also be so called priority pricing where the price is higher. In priority pricing the consumer is guaranteed access to a service or availability of the product when demand is high. (Nagle & Hogan 2006, 66.)

One way to price discriminate is to change the price continuously by reacting to demand (dynamic pricing). The pricing and inventory decisions should not be done separately as they are being done in most companies (Netessine 2004). In seasonal business, the inventory levels and short selling period should be considered carefully in pricing decisions if price changes are costly. So called dynamically posted prices can be used, as *take it or leave it* prices (Elmaghraby & Keskinocak 2003).

Such prices are based on time, demand and inventory levels. The difference between the expected demand and the realized demand creates a risk that needs to be taken into account in the pricing strategy of seasonal products or services (Meijer & Bhulai 2013).

Because of the high share of e-Commerce and aggressive price promotions, consumers' perceptions of discounts and threshold for discounts have changed. Consumers increase their purchase intent if there is a discount and expect a discount to exist even when none is advertised as now that consumers have become used to getting discounts, they automatically expect a discounted price. (Kukar-Kinney & Carlson 2015)

While many consumers see discounts and sales as a good thing, others think that they are proof of original prices that are too high (Bechwati, Sisodia & Sheth 2009). Seasonality is a valid reason for a price change (Dholakia 2015). Another good reason for a price change is for example getting rid of inventory when introducing new versions of products. (Dholakia 2015) Also increasing raw material or labor costs may lead to the need to increase prices.

Figure 8 demonstrates how in high and low pricing strategy, there are, for example, regular sales, and the high and low prices take turns. (Schindler 2012, 234). High prices can only be used if there is real value for the customers, otherwise it will lead to failure. The low price strategy requires a high volume of customers to compensate for the low margins (Dolgui & Proth 2010). An example of the opposite strategy for high and low pricing is the everyday low prices that large supermarkets are using (Schindler 2012, 234).



FIGURE 8. Comparison of High/Low pricing with everyday low pricing (Schindler 2012, 234, modified)

3.2.5 Price fairness

All three levels of price execution processes need to be considered when planning price changes (Bouter 2013). Big price changes without a clear and justified reason are considered as unfair. In seasonal business, it is important to understand that consumers perceive unfairness, if they feel they are being taken advantage of when they have no other choice but to buy the product (Bechwati, Sisodia & Sheth 2009).

Consumer perceptions of price unfairness come from past prices, competitor prices and costs (Bolton, Warlop & Alba 2003). According to Caldwell (2012), psychology is an important part of successful pricing. One of the key challenges is how to ensure customer loyalty without giving up profit.

Bertini makes a statement in Sinclairs (2017) article that *pricing is a communication tool just like advertising* and Sinclair (2017) also points out that customers nowadays are very active in comparing prices and they also actively share that information on social media. Figure 9 illustrates how price fairness has a link to customer satisfaction (Martin-Consuegra et al. 2007). If prices are seen as unfair, the business suffers. The fairness of the price influences the customer willingness to buy (Maxwell 2001). The fairness of the price itself is different to the fairness of the company's pricing practices.



- H1 Price fairness is positively associated with customer satisfaction.
- H2 Customer satisfaction is positively associated with customer loyalty.
- H3 Price fairness is positively associated with customer loyalty.
- H4 Customer satisfaction is positively associated with price acceptance.
- H5 Customer loyalty is positively associated with price acceptance.

FIGURE 9. Path diagram of integrative model results (Martin-Consuegra et al. 2007, modified)

Price fairness is positively associated with customer satisfaction and loyalty. If the price is seen to be unfair, customer satisfaction lowers and the willingness to pay declines. Satisfaction and loyalty have positive influences on price acceptance (willingness to pay), hence those factors should be paid attention to when planning pricing structures.

3.3 Psychology in pricing

A review of the literature for psychology in pricing explores such pricing theories that are needed in operational pricing decisions. Referring to a more expensive product when displaying prices, using discount signs, ending the prices in number nine and pricing some products very low to attract customers are the most common ways to utilize psychology in pricing. (Somervuori 2018)

3.3.1 Price reflects quality

If the price is not consistent with the quality of the product, the consumer might not buy the product (Somervuori 2018). Consistent pricing signals reliability. Consumers do not always buy the cheapest priced product, even if the products are the same (Ding, Ross & Rao 2010).

Placing higher prices indicates that the product has higher value as price is an indicator of quality and **customer willingness to pay** increases. (Caldwell, Somervuori 2018). The higher the price, the more the consumers evaluate the purchase, as consumers do not want to take the risk of paying too high price or of buying a product that is not of good quality. Discounts reduce need to evaluate the price (Somervuori 2018). Bornemann and Homburg (2011) suggest that consumers are more focused on quality when the purchase is psychologically distant than when it is near.

Sometimes it can be beneficial to overprice the products, for example in a market where the prices are declining rapidly overpricing can reverse the harmful trend (Bertini & Wathieu 2010). All price changes should be justified and clarified to the consumers, including reducing prices, so that the consumers do not feel that there is change in quality (Somervuori 2018).

3.3.2 Price bundling

Price bundling is offering two or more products at a discounted price, hence the paid price is lower than what it would be if those products were purchased separately. Price bundling is also **price discrimination**. Those consumers, who buy two or more products at the same time, pay a different price than those consumers who buy only one product.

Bundling makes it impossible for the product to be directly compared with competing products. A bundle can give good value for money for the customer and emphasizes the value that customers get. Consumers generally think that by purchasing in bundles they always get a discount. (Heeler 2007)

Price partitioning is used in many different industries and for many different products. Sometimes a secondary attribute, e.g. shipping cost, is neglected if the price is all-inclusive, but overemphasized if the price is partitioned. According to Bertini & Wathieu (2008) consumers use the largest number as a price reference and the remainder of the price is not evaluated so carefully. That might have positive impact on demand.

Unbundling is also commonly used in dynamic pricing. Unbundling means showing the prices of different components separately and allowing the consumers to choose which ones they want to buy. Normally consumers have to pay the full price even if they do not need all the service, for example, airlines use this. Consumers pay separately for baggage, food, seat selection etc. Unbundling requires a good understanding of the consumers' needs. Showing the price as unbundling can also increase the consumers' perceived value for the product or services offered. (Song & Li. 2018)

3.3.3 Choosing the numbers

As consumers prefer products with attractive prices, those should be carefully reframed for better consumer admittance. Reframing prices has positive effects. (Bambauer-Sachse & Grewal 2011)

People read numbers from left to right and do not pay as much attention to the first numbers as to the last. According to Somervuori (2018), consumers notice more easily a price difference in small amounts than in big ones. This relationship is not logical and this is something that should be utilized in pricing. Consumers think that prices ending in 99 are used when a product is on sale or when the product has been priced as low as possible (Somervuori 2018). Using prices ending in 99 creates a perception that the price is lower. The use of such pricing will tend to make consumers remember the prices lower than they actually were. On the other hand, according to Schindler (2012) just below pricing can also signal that the product or shop quality is lower. Consumers are aware of the just below tactic as it is so commonly used. This might make consumers feel manipulated and question the company's integrity.

Some companies use sharp number pricing, such as for example $176,45 \in$ and some consumers perceive this price lower than the round number price like $176,00 \in$ in this example. Consumers might think that when the price is not even, it has been carefully calculated and is the best possible. (Schindler 2012)

Many companies see price changes as a good way to get customers to buy. According to Dholokia (2015) price changes are seen in many companies as a good way to offer discounts and protect margins but on the other hand many consumers see them as confusing, frustrating and annoying. Managers are often doing price changes to increase sales if there is a lot competition in the market. Consumers might not be as **price sensitive** as the company thinks. It might not make any difference if the price is, for example, $10 \in$ less or more. Consumers might not even notice the changes or their perception of the company's price position might be something other than what the company itself thinks. (Heda et al. 2017)

3.3.4 Price decoys

One way to influence the consumers' perception of price and indirectly influence the **reference price** is to use price decoys. These are simple to implement. If there are two products in the selection, a third one is added with higher price and premium quality (Caldwell 2012). Then it is possible to increase the price of the second product and still the customers see it as a very appealing choice. Customers make comparisons between products because it makes their buying decision easier.

By having a product that is priced asymmetrically higher, the perception of prices of the other products is influenced. They might not have any other reference price. With decoys, it is possible to make the product look better than it would without the decoys (Caldwell 2012, Bouter 2013). The decoy needs to be such a product that is actually available if somebody orders it.

4 PRICE SENSITIVITY ANALYSIS

The objective of the price sensitivity analysis in this thesis is to find out how much consumers are willing to pay for product X. In this case price sensitivity is the change in demand caused by price changes.

Pricing analysis is complex to execute, as the consumers' willingness to pay is difficult to observe because consumers do not always answer honestly when asked a price that they are willing to pay. The answer is subjective. The answer is also changeable as it depends on many variables such as the time, consumers' intention to buy, budget, preference etc. The price sensivity also changes if the conditions such as the competitors' prices change. (Bouter 2013)

The core question in price sensitivity is according to Bouter (2013): *How high is demand for your product or service with certain prices or pricing structures?* This research does not include any emprical research about the effects of price changes by observing the consumers' behaviour, instead the answer is obtained by asking them direct questions in an online survey.

This chapter explores the results of the analysis and four important findings related to pricing are defined: Optimal price point, the point of marginal expensiveness, indifference price and range of acceptable price. The results give insight to consumer behavior and willingness to pay.

4.1 Online survey

The data was collected using an online survey in September 2018. Anyone could answer the survey. The survey was promoted on Company X's Facebook page and a newsletter was sent by email to the existing customers that participate in the company's loyalty program. The number of respondents to the survey was 1300 of which 632 answers were usable after validating the data.

4.1.1 Importance of timing

The timing for executing the survey was very important because product X is a low interest product from a consumer's point of view, and is purchased only for need. To maximize survey effectiveness, the time chosen for the survey was a few weeks before the highest demand and sales season of the year. This is when customers are assumed to have their highest interest in the product, thus increasing the likelihood of obtaining more answers that are accurate.

The choice of timing was even more important given that the total number of answers almost halved after removing potentially invalid responses. If the survey had been done outside the sales season, consumers have less interest in answering the survey and the answers would be less reliable.

4.1.2 Framing of questions

Respondents were asked how much they are willing to pay for product X during low season and what would be the maximum price they would be willing to pay during high season.

To be able to find out the consumer willingness to pay in specific times, the questions were reframed for the survey from the original Van Westendorp questions. They were also asked in a different order compared to the original order. For the actual analysis, the order of the answers was changed to match the original questions, as the price in the previous answer always needs to be lower than the next one. The questions in the survey form were following, in this specific order:

Q1 What price would be so cheap, that you would be willing to buy the example product already in September? *Original Van Westendorp Q2: At what price would you consider the product to be priced so low that you would feel the quality could not be very good?* (Too cheap)

Q2 What would be the highest price that you would be willing to pay for the example product in September? *Original Van Westendorp Q4: At what price would you consider the product to be a bargain—a great buy for the money? (Cheap/Good Value)*

Q3 Would you be willing to pay more than the normal price to be able to access the product X at the time of need without queuing? If you would be, how much? *Original Van Westendorp Q3: At what price would you consider the product starting to get expensive, so that it is not out of the question, but you would have to give some thought to buying it? (Expensive/High Side)*

Q4 What would be so high price for the example product, that you would not be willing to pay it. Original Van Westendorp Q1: At what price would you consider the product to be so expensive that you would not consider buying it? (Too expensive)

The questionnaire also included questions on factors that influence purchase decisions. Those questions were ideas that could be used to create bundling. For example vouchers or discounts for different products or services of Company X (Refer to 4.6. Alternatives for discounts). Data on those factors helps build a plan that includes a mix of direct price changes and indirect tactics, like reward programs.

4.2 Use of an example product

As most consumers do not buy products from Company X every year, and so may not be aware of current prices, respondents were given an example product, product X, with an assigned reference price. If respondents are not familiar with what is being asked, the survey data will not be as useful. This was clearly seen in the data cleaning phase as approximately half of the data was valid and the remainder was excluded from analysis.

An example product was used and a reference price was given to get answers that are comparable. This assumes that the consumer understands the landscape of the product to an extent that the levels of sensitivity can be picked.

When a product is shown to respondents, they are most likely to answer when the price is too low or when the product in their opinion is overpriced. The principle when making a survey is that people do not always know the exact price but they are better at spotting when the price is very low or when it is too high (Galenter, Moskowitz & Silcher 2011). It should be noted that there is only one product in this study, so further research should be done on other products in order to be able to make more extensive claims based on results.

4.3 Respondents' profiles

The data is not split equally between men and women (Detail in **Appendix 2**). Also some age groups have fewer answers than others. Men over 56 years old form the biggest age group and there were only a few responses from people under 25 years old. The split between the sociodemographic groups reflects Company X's customer database well and in fact, 83 % of the respondents have purchased products similar to product X from Company X at least once in the past. As we can see from the following graphs, there exists comprehensive sampling across both age (excluding the under 25 year olds) and location.

4.3.1 Geographical distribution

Figure 10 shows that 47 % of the respondents are from smaller cities such as Hämeenlinna, Lahti, Lappeenranta, Joensuu, Jyväskylä, Kajaani, Kotka, Seinäjoki and Rovaniemi. The share of capital area is 18 %, and the share of other big cities is 16 %. Company X has an extensive network of stores and results give good coverage of Finland.



FIGURE 10. Respondents' geographical distribution (N=1300)

4.3.2 Age distribution

As Figure 11 shows, the respondents age profile is well split and all other age groups are represented except the under 25 year olds.



FIGURE 11. Respondents' age distribution (N=1300)

4.4 Analysis of results

Table 2 shows the cumulative percentage of the respondents' answers. The price sensitivity graph is made based on this data (refer to figure 12). The point where half of the respondents answered that the product was *too cheap* and half thought that it was not too cheap (marked as 1) is the **point of marginal cheapness**. The point where half of the respondents think that the product is too expensive and half think that it is not (marked as 2) is the **point of marginal expensiveness**.

	Too expensive	Too cheap	Expensive/ high side	Cheap/ good value
Category 1	2 %	100 %	4 %	100 %
Category 2	2 %	29 %	5 %	63 %
Category 3	3 %	13 %	5 %	48 %
Category 4	4 %	9 %	7 %	45 %
Category 5	4 %	0 %	7 %	14 %
Category 6	5 %	1 %	9 %	12 %
Category 7	24 %	1 %	84 %	7 %
Category 8	75 %	0 %	94 %	3 %
Category 9	100 %	0 %	100 %	0 %

TABLE 2. Data work sheet

Price points marked as 1 and 2 in table 2 show that the correct price range is between category 2 (PMC) and category 7 (PME). These are not theoretical points but are the median, where half of the respondents think that the product is too cheap and half of the respondents thank that the product is too expensive. The average of these two points would be the most straightforward approach to the correct price.

The data can also be analyzed by looking at the lines *too cheap* and *too expensive*, two extreme prices, in figure 12. Looking at the graph we can see that the **optimal price point**, which lies at the intersection of lines *too expensive* and *too cheap*, is exactly the same amount. This verifies that the answers have been consistent and in that sense the analysis can be thought as reliable.

Figure 12 is the price sensitivity graph that shows the cumulative shares of answers from table 2 for each of the four questions. The area in between the lines is the **range of acceptable prices**, hence the area between the point of marginal cheapness and the point of marginal expensiveness. The range is very narrow, but realistic in the business context of the case company. The actual price of product X is within the range and the market average price is close to the optimal price point.



FIGURE 12. Price sensitivity graph

Indifference price point is the point where most respondents think that the price is insignificant. In these results, it is very close to the point of marginal expensiveness. There is an inverse relationship between indifference and price consciousness and that may explain the results. The indifference percentage is low (12 %) and that indicates a high level of price consciousness, while high indifference is characteristic of scattered price consciousness (Travis 1982).

The price range found is below the reference price given to the responents in the survey. Thus, we say the calculated optimal price is $X \in$, where we predict the maximum volume of product will be sold. The indifference price is between category 5 and 6. This is the point at which the same percentage of customers feel that the product is getting too expensive as those who feel it is at a bargain price.

By analysing the data, a theory can be made about off-peak and pre-season pricing, the price should be in category 4. From that, and the given reference price, it can be calculated that the price should be X % lower in order to have an influence on the consumers' purchase decision to buy before the peak time. The point of marginal expensiveness is in category 7 and that is where the fewest people will not buy because they consider the product too expensive.

4.5 Generalisations

A generalization on consumer behavior can be made from the qualitative data received from the open questions. According to the data 8 % of the respondents had spontaneously answered that service influences the purchase decision. An equal amount 8 % answered that price is the only thing that matters. A larger proportion of those saying only price counts would be willing to pay extra to get the product at the time of need when compared to those who said that service counts. They are not willing to pay any extra for the service. It is a controversial result.

When comparing average prices for each question it can be seen that women have given lower prices than prices given by men. There were also more invalid responses from women, which may come from a lack of price consciousness. The results suggest that women have lower willingness to pay than men. On average men are willing to pay for the product X 7 % more than women.

Table 3 shows that the biggest difference in answered average price comparing genders, is in question 3: At what price would you consider the product becoming too expensive – so that it is not out of the question, but you would have to give some thought to buying it if you would get it at the time of need? (Expensive/High Side).

Question	difference between men and women
1	8 %
2	4 %
3	13 %
4	3 %

TABLE 3. Comparison of answered prices between genders

These results may indicate that women are not as aware of the price elasticity of product X as men are and that men have price expectations that more closely match the business context.

4.6 Alternatives for discounts

Three different alternatives of price bundling were offered to the respondents in the survey to see how interesting the consumers think those are. The scale for answering was from "1: Not interesting at all" to "5: Very interesting". The offered alternatives were:

- 1. Additional service -50 %
- 2. $X \in$ discount of the next purchase
- 3. $X \in$ voucher for another product

Figure 13 shows the results for the different offered price bundling alternatives. It can be seen that the most interesting options were the ones where prices were mentioned, eg. -50 % versus $X \in$ discount.



FIGURE 13. Three different options for price bundling

Bundling was offered as one option for influencing the purchase decision in the survey to see if it is possible to get sales earlier without reducing the actual sales price of product X. The benefit of price bundling is to get business into off-peak times by offering consumers other services of the company instead of giving profit away. Customer loyalty is something that is also encased in price bundling.

The most positive result was received for the $X \in$ discount for the next purchase, which demonstrates this is a good way to engage customers. A quantity based discount was also mentioned in the open answers.

Additional service -50 % was the least interesting option. From the respondents, 24 % are using such service, and almost an equal amount replied that it would be an interesting option. The average price for the additional service that was offered is $X \in$ so the discount of $X \in$ would be only X % of the reference product in the survey. For the most interesting bundling option, the $X \in$ voucher for next purchase the additional discount is X % of the reference price.

Additionally the open question, *what else would influence your purchase decision?* was asked. A reasonable share of 9 % of comments included the word *service*. This was more than the respondents replying *price*, which was 8 % of the respondents. As few as eight respondents mentioned online shopping or online prices as being a factor that influences their purchase decision. Out of the total amount of 1300 answers, 15 respondents mentioned that the salesperson could influence the purchase decision.

Ideas to be considered from the answers on the open fields of the survey are volume discounts or vouchers for other services such as fuel, food stores, hotels or cruise gift cards.

5 RESEARCH RESULTS

This chapter reviews the results with respect to the three process levels in executing pricing (refer to TABLE 1. Pricing process level chart (Bouter 2013, 155, modified)

, strategical, tactical and operational, in order to answer the research question of how pricing can be used as a tool to influence the demand for seasonal consumer commodities.

5.1 Strategic level – maximizing profits

Results from the price sensitivity analysis give valuable insights into consumer behaviour. As can be seen from the survey data, there are a number of customers who would be willing to purchase in advance if there was some benefit for them.

Cost based pricing is the most used pricing method in the industry that the case company operates in. Competition based pricing is also used even though in seasonal business it would seem logical to use dynamic pricing given there is such a large variation in demand depending on whether it is peak time or off-peak time. Dholakia (2015) states, the key in a dynamic pricing model is to discover how demand responds to changes in price but measuring how demand responds to changes in price in seasonal business is challenging, as there are factors such as weather that influence demand significantly and as such annual variations are not strictly comparable.

From the price sensitivity analysis it was found out that 20 % of the respondents would be willing to pay more than the normal price to get product at the time of the need without needing to queue. A controversial result was also found from the analysis: Some respondents had spontaneously answered that service influences the purchase decision but those respondents were not willing to pay any extra for the service. An equal amount of respondents had answered that price is the only thing that matters, but despite their statement that only price counts, they were willing to pay more to get the product at the time of need.

Such findings support the need for dynamic pricing. Better prices should be asked from those who are willing to pay more and for the ones that only want low prices they should be offered an option to buy in advance or at off-peak times.

Dynamic pricing is about maximizing volumes and total profits. It should improve inventory and capacity utilization but it will have a negative impact on average price (Nagle & Hogan 2006). The risk in dynamic pricing is giving discounts to customers who are willing to pay full price (Bertini & Koenigsberg 2014).

5.2 Tactical level

The challenge in influencing demand by changing prices is in forecasting the customers and competitors behavior but when capacity is limited and demand is uneven, results show is that such pricing policies may be critical for competitiveness (Yuan & Hwarng 2016).

5.2.1 Understanding price sensitivity

To be able to execute dynamic pricing and make needed price changes, a company must understand consumer price sensitivities and the elasticity of the products and services they are selling.

The price sensitivity analysis indicated a high level of price consciousness as the indifference percentage is low (Travis 1982). From that can be drawn a conclusion that the market is sensitive to price, hence prices changes do influence demand (Schindler 2012). The range of acceptable prices was on a scale of +/- 20 % from the reference point. In practice that could indicate that, the product X is relatively inelastic and the discounts need to be fairly big to result in large changes in demand (Gallo 2015).

Price promotions influence price sensitivity but they should not be avoided for that. Price promotions could be also an advance sales campaign. Companies must also understand consumers' expectations, as most consumers assume if they buy in advance or off-peak that the price is different than in peak season. This was also mentioned in the open comments by one respondent: *One can get also quality at a good price, when you buy at the right time, at the right place.*

It should be also kept in mind that according to the survey consumers buy the product only once every three years so most likely they are not interested at all in the price of this product in between the time of need. Companies should try to benefit from the theory Bornemann and Homburg (2011) suggested, that consumers are more focused on quality when the purchase is psychologically distant than when it is near, hence offering bundling of some sort could influence the customers' willingness to buy.

5.2.2 Discounting or bundling

Companies could offer consumers additional services or benefits via price bundling instead of giving additional discounts. The survey results gave evidence that consumers are interested in such promotions. Bundles are a good way to engage customers, in particularly if for example the offer is such that some part of the bundle is used later as that creates an opportunity to sell something more when the consumer visits the shop.

Consumers generally think that by purchasing in bundles they always get a discount (Heeler 2007). As it is not possible to give big discounts for the products, a bundle can make the consumer feel they are getting good value for their money. Another benefit of bundling is that it is not possible for the consumer to compare the products directly to competing products (Heeler 2007). That is beneficial when consumers are price sensitive. A bundle can give good value for money for the customer and emphasizes the value that customers get. The survey provided new ideas for bundles from the consumers' comments such as a quantity based discount when two products are bundled.

5.3 Operational level

Rules are needed to manage price changes in order to even out the demand. Price discrimination should be done in a planned and controlled way and price bundling options need to be carefully evaluated and executed. From the price sensitivity analysis we can calculate the discount for advance pricing.

5.3.1 Seasonal price changes

Price discrimination is one way to include the time dimensions into pricing strategy. Overall, the analysis gives a clear indication that dynamic pricing could be beneficial in evening out demand - even on a smaller scale with a limited number of price changes. The optimal time of price changes should be defined according to the seasonality of the business.

The survey results show that 20 % of the respondents would be willing to pay more to get the product at the time of need without having to queue. This should be done by using price discrimination as a pricing device. For the customers who are not willing to pay more should be offered the opportunity to buy also at peak times but at the normal price or demand will decline dramatically as the price would be too high compared to the market average price.

Figure 14 is modified from the Schindler's pricing models (2012) to illustrate seasonal price changes. The normal price is fixed and from that, peak and off-peak prices are calculated. All price changes also need to be justified to the consumers.



FIGURE 14. Seasonal price changes (Schindler 2012, 234, modified)

5.3.2 Reframing the discount

Respondents were offered three alternatives in the survey to replace a direct discount on the product. The results show that in those price bundlings where the discount was communicated in terms of euros, such as *x euros* were more interesting than the offer where the discount was communicated as *half the price* without showing the original price.

The survey results suggest that the advance price needs to be as low as in category 2. That means the discount is X % from the given reference price. Such discount might have a negative impact on consumers' perception of price. Consumers are attracted by high discounts but it would be better to reframe the discount into euros instead of percentage.

All prices should be carefully evaluated as even a small increase in price has a large positive impact on the profits. For example if the calculated price ends in number four it might as well be priced ending at number nine. For the consumers it will most likely appear that the price was carefully evaluated and the product has been priced as low as possible. (Schindler 2012, Somervuori 2018)

6 DISCUSSION

As was stated in the introduction, setting the right price for products is not easy and yet it has a great impact on the company's bottom line. According to Bertini & Ham (2013) companies are very aware of and good at understanding competitor pricing but lack skills in understanding customer value and price sensitivity.

The objective of this thesis was to study how to use pricing as a tool to influence demand in seasonal business. The main outcome that the thesis is the use of advance purchase discounts as a price discrimination device, because shifting the purchase decision earlier for seasonal products helps with inventory and may help to increase profits (Nagle & Hogan 2006, Nocke et al. 2010, Lee & Ng 2001, Gao et al. 2012, Schindler 2012). Consumers with a lower willingness to pay could be offered an advance purchase discount, and the consumers who have higher willingness will possibly delay their purchase decision to the time when they need the products.

By understanding consumers' price sensitivity, it is possible to influence purchase decisions. Price sensitivity analysis gives a good understanding of the elasticity of the industry. Gallo (2015) stated in his research that it is impossible to know what consumers will do at every price point of every product. The analysis on consumer price sensitivity shows that the current price of product X is on the high end of the range of acceptable prices when compared to the optimal price point. They survey shows that some consumer perceptions of prices for product X and discounts that should be given are unrealistic. The fact that the product is purchased only once every three years on average might influence that.

In the survey results it was found that if the additional discount is given as a voucher which can be used in future purchases it influences the purchase decision for over 50 % of the respondents. If the same amount of discount is given at the time of purchase of the product it does not have as big an influence. That finding supports the theory of Heeler (2007) that consumers generally believe that bundles include a discount. As with pricing at the time of purchase, price

bundling is a tool for price discrimination. Company X should consider price bundling as a strategic alternative to direct price discounts and if giving a direct discount, it should only be given for one component of the product.

It was found from the price sensitivity analysis that some customers would be willing to buy in advance if they received a discount. If the same price is used for all customers, the company might lose profit (Bertini & Koenigsberg 2014) and in addition, companies should never give discounts to customers who are willing to pay the full price. The results of this thesis show that price discrimination should be used for those customers with low willingness to pay and the purchase decision should be influenced in order to even out the demand.

Time of purchase should be used as the key driver in pricing in seasonal business instead of the purchase cost of the product. Based on the literature reviewed and the results of the price sensitivity analysis, a mechanism to plan and manage seasonal price changes could be created.

Future research could study the benefits of value based pricing, such as can profits be increased during peak times by value creation or better communication of services. An important factor that this study does not take into account is the competitors' reactions to potential changes in consumer behaviour due to the selected pricing model. To be able to set the correct price we need to understand consumer expectations as the price can easily be set as too high or too low. Further research in price bundling and customer loyalty is recommended.

REFERENCES

Apollonsky, D. 2017. Easy Guide: How To Run a Van Westendorp Pricing Analysis. Read on 9.9.2018. <u>https://apollonsky.me/how-to-van-westendorp-analysisexcel/</u>

Aydinli, A., Bertini, M. & Lambrecht, A. 2014. Price Promotion for Emotional Impact. Journal of Marketing. Vol. 78, 80-96.

Bambauer-Sachse, S. & Grewal, D. 2011. Temporal Reframing of Prices: When is it Beneficial? Journal of Retailing. Vol. 87, 156-165.

Bechwati, N., Sisodia, R. & Sheth, J. 2009. Developing a model of antecedents to consumers' perceptions and evaluations of price unfairness. Journal of Business Research. Vol. 62, 761-767.

Bertini, M. & Ham T. 2013. The right price, at the right moment, to the right customer. Business strategy review. Issue 1, 49-53.

Bertini, M. & Koenigsberg, O. 2014. When Customers Help Set Prices. MIT Sloan Management Review. Vol 55, Issue 4, 57-64.

Bertini, M. & Wathieu L. 2010. How to stop customers from Fixating on Price. Harvard Business Review. 1-10.

Bertini, M. & Wathieu L. 2008. Attention Arousal through Price Partioning. Research Note. Marketing Science. Vol. 27, No. 2, 236-246.

Bitran, G. & Mondschein, S. 1997. Periodic Pricing of Seasonal Products in Retailing. Management Science. Vol. 43, No. 1, 64-79.

Bolton, L. & Warlop, L. & Alba, J. 2003. Consumer Perceptions of Price (UN) Fairness. Journal of Consumer Research. Vol. 29, No. 4, 474-491

Bornemann, T. & Homburg, C. 2011. Psychological Distance and Dual Role of Price. Journal of Consumer Research. Vol. 38, No. 3, 490-504

Bouter, E. 2013. Pricing: The third business skill. Principles of Price Management. Loenen aan de Vecht: FirstPrice B.V.

Breidert, C., Hahsler, M. & Reutterer, T. 2006. A review of methods for measuring willingness to pay. Innovative Marketing, Vol. 2, Issue 4, 8-32.

Briesch, R., Krishnamurthi, L. & Mazumdar, T. & Raj, S. 1997. A comparative Analysis of Reference Price Models. Journal of Consumer Research. Vol. 24, No. 2, 202-214.

Caldwell, L. 2012. The Psychology of Price. London: Crimson.

Daniel, B. & Harland, T. 2018. Higher Education Research Methodology. New York: Routledge.

Elmaghraby, W. & Keskinocak, P. 2003. Dynamic Pricing in the presence of Inventory Considerations: Research Overview, Current Practices and Future Directions. Management Science. Vol. 49, No. 10, 1287-1309.

Dholakia, U. 2015. The Risks of changing your prices too often. Harvard Business Review. 1-4.

Dholakia, U. 2018. When Cost-Plus Pricing is a good idea. Harvard Business Review.1-4.

Ding, M., Ross, W. & Rao, V. 2010. Price as an Indicator of Quality: Implications for Utility and Demand Functions. Journal of Retailing. Vol. 86, 69-84.

Dolgui, A. & Proth, J. 2010. Pricing strategies and models. Annual Reviews in Control. Vol. 34, 101-110.

Fu, H., Dan, B. & Sun, X. 2014. Joint Optimal Pricing and Ordering Decisions for Seasonal Products with Weather-Sensitive Demand. Discrete dynamics in Nature and Society. Issue 4, 1-8.

Galenter, E., Moskowitz, H. & Silcher, M. 2011. What's the fair price? People, Preferences & Prices: Sequencing the Economic Genome of the Consumer Mind, 25-32. ISBN: 978-1-60805-642-2. E-book: Bentham Science Published Ltd.

Gallo, A. 2015. A refresher on price elasticity. Harvard Business Review. 1-6.

Gao, F., Demirag, O. & Chen, F. 2012. Early Sales of Seasonal Products with Weather-Conditional Rebates. Productions and Operations Management. Vol. 21, No. 4, 778-794.

Gibbs, G. 2018. Analyzing Qualitative Data: Qualitative Research Kit. London: Sage

Grbich, C. 2013. Qualitative Data Analysis: An Introduction. London: Sage

Gupta, S. & Carter, E. 2014. Creating Customer Value. Harvard Business Publishing. 1-22.

Han, S., Gupta, S. & Lehmann, D. 2001. Consumer price sensitivity and price thresholds. Journal of Retailing. Vol. 77, 435-456.

Haws, K. & Bearden, W. 2006. Dynamic Pricing and consumer Fairness Perceptions. Journal of Consumer Research. Vol. 33, No. 3, 304-311.

Heda, S., Mewborn, S. & Caine, S. 2017. How customers perceive a price is as important as the price itself. Harvard Business Review. 1-6.

Heeler, R. 2007. Bundles = discount? Revitising complex theories of bundle effects. Journal of Product & Brand Management. Vol. 16, Issue 7, 492-500.

Hinterhuber, A. & Bertini, M. 2011. Profiting when customers choose value over price. Business strategy review. Issue 1, 46-49.

Kahn, B. & Louie, T. 1990. Effects of Retraction of Price Promotions on Brand Choice Behavior for Variety-Seeking and Last-Purchase-Loyal Consumers. Journal of Marketing Research. Vol. 27, Issue 3, 279 – 289.

Kotler, P. & Armstrong, G. 2018. Principles of Marketing. Global edition. London: Pearson.

Kukar-Kinney, M. & Carlson, J. 2015. A fresh look at consumers' discounting of discounts in online and bricks-and-mortar shopping contexts. Journal of Research in Marketing. Vol 32, 442-444.

Lambrecht, A. & Tucker, C. 2012. Paying with Money or Effort: Pricing When Customers Anticipate Hassle. Journal of Marketing Research. Vol. XLIX, 66-82.

Lee, L., Lee, M., Bertini, M. & Zauberman, G. & Ariely, D. 2015. Money, Time, and the stability of consumer preferences. Journal of marketing Research. Vol. LII, 184-199.

Lee, K. & Ng, I. 2001. Advance sale of service capacities: a theoretical analysis of the impact of price sensitivity on pricing and capacity allocations. Journal of business Research. Vol. 54, 219-225.

Lee, L. & Tsai, C. 2013. How Price Promotions Influence Postpurchase Consumption Experience over Time. Journal of consumer Research. Vol. 40. 943-959.

Lin, K. & Sibdari, S. 2007. Dynamic price competition with discrete customer choices. European Journal of Operational Research. Vol. 197, 969-980.

Martin-Consuegra, D., Molina, A. & Esteban, A. 2007. An integrated model of price, satisfaction and loyalty: an empirical analysis in the service sector. Journal of product & Brand Management. Vol. 16, Issue 7, 459-468.

Maxwell, S. 2001. Rule-based price fairness and its effect on willingness to purchase. Journal of Economic Psychology. Vol. 23, 191-212

Meijer, R. & Bhulai, S. 2013. Optimal pricing in retail: a Cox regression approach. International Journal of Retail & Distribution Management. Vol. 41, No. 4, 331-320.

Mohammed, R. 2017. How retailers should think about online versus in-store pricing. Harward Business Review. 1-4. Nagle, T. & Hogan, J. 2006. The Strategy and Tactics of Pricing: A Guide to Growing More Profitably. London: Pearson.

Netessine, S. 2004. Dynamic pricing of inventory/capacity with infrequent price changes. European Journal of Operational Research. Vol. 174, 553-580.

Nocke, V., Peitz, M. & Rosar, F. 2010. Advance purchase discounts as a price discrimination device. Journal of Economic Theory Vol. 146, 141-162.

Schindler, R. 2012. Pricing Strategies, A Marketing Approach. London: Sage.

Shen, X., Bao, L. & Yu, Y. 2018. Coordinating Inventory and Pricing Decisions with General Price-Dependent Demands. Productions and Operations Management Society. Vol. 27, No. 7, 1355-1367.

Shi, J., Fung, R. & Guo, J. 2016. Optimal Ordering and Pricing Policies for Seasonal Products: Impact of Demand Uncertainty and Capital Constraint. Discrete Dynamics in Nature and Society. Research Article. Vol. 2, 1-13.

Sinclair, J. 2017. Does your pricing match your strategy? Aalto Leader's insight article. Read 10.5.2018. <u>https://www.aaltoee.com/aalto-leaders-in-sight/2017/does-your-pricing-match-your-strategy</u>

Simchi-Levi, D. 2017. The new frontier of price optimization. MIT Sloan Management Review. Vol 59, No 1, 22-26.

Smith, G. & Nagle, T. 1994. Financial Analysis for Profit driven Pricing. MIT Sloan Management Review. Vol. 35, Issue 3, 71-84.

Somervuori, O. 2018. Mitä maksaa? Hinnoittelun psykologiaa. Jyväskylä: Osuuskunta Generaattori.

Somervuori, O. & Rajava, N. 2013. Purchase behavior and psychological responses to different price levels. Psychology and marketing. Vol. 30, 479-489.

Song, B. & Li, M. 2018. Dynamic pricing with Service unbundling. Production and Operations Management. Vol 27, 1334-1354.

Travis, K. 1982. Price Sensitivity Measurement technique plots Product price vs. Quality perceptions. Marketing News. Vol. 5, Issue 15, 6-9.

You, P. & Chen, T. 2007. Dynamic pricing of seasonal goods with spot and forward purchase demands. Computer and Mathematics with Applications. Vol. 54, issue 4, 490-498.

Yuan, X. & Hwarng, H. 2016. Stability and chaos in demand-based pricing under social interactions. European Journal of Operations Research. Vol. 253, Issue 2, 472-488.

Zauberman, G., Kim, B., Malkoc, S. & Bettman, J. 2009. Discounting Time and Time discounting: Subjective Time Perception and intertemporal Preferences. Journal of Marketing Research. Vol. XLVI, 543-556.

APPENDICES

Appendix 1. Copy of survey, modified

		Attention by Lyyti
Kuinka monta taloudessasi	Valitse:	
on? *		
Kuinka usein taloudessasi ostetaan	Valitse:	-
2*		
Onko joku taloudestasi joskus käyttänyt	Valitse:	•
? •		
Onko talouteesi joskus ostettu	Valitse:	•
2.		
	Valitse:	•
2.		
Esimerkiksi	mał	rsavat
€. Hinta sisältää		
	€.	
Kun		
Mitä hintaa esimerkkituotteelle pitäisit	1	3
niin halpana, että olisit heti valmis	-	
ostamaan jo syyskuussa?€*		
Mikä olisi korkein hinta		
esimerkkituotteelle, minkä olisit valmis		
maksamaan, jos ostaisit jo		
syyskuussa?€*		
Olisitko valmis maksamaan enemmän	1	
kuin normaalihinnan saadaksesi		
haluamanasi ajankohtana		
ilman jonotusta silloin, kun niitä		
tarvitaan? Jos olisit, niin kuinka paljon? *		
Mikä on niin korkea hinta		1
Mikä on niin korkea hinta esimerkkituotteelle, ettet olisi valmis		

	Ei Iainkas kiinnost	an ava		kii	Erittäin nnostava
puoleen hintaan	\odot	0	0	\odot	0
€ alennus seuraavasta	0	0	0	\odot	0
€ etukuponki *	0	0	\odot	\odot	0
Mikä muu vaikuttaisi ostopäätökseen?	C.				
Taustatiedot					,d
Sukupuoli *	Valitse	s::			
lkä *	Valitse	:			-
Asuinpaikka *	Valitse	5			•
Jos haluat osallistua puhelinnumerosi ja/tai sähköpostiosoite.				jätä	
Nimi (ei pakollinen tieto)					
Puhelinnumero					
Sähköposti					1
			Lähet	ã vastau	kset

Jos hinnanalennus syyskuussa ei olisi mahdollinen, pitäisitkö kiinnostavana seuraavia vaihtoehtoja?



Appendix 2. Respondents profile between genders, N=1300

Appendix 3. Data worksheet in the Van Westerndorp method layout. The table shows the cumulative percent of the answers of 632 respondents.

	Q1 At what price would you consider the product too expensive, that you would consider not buying it? (Too expensive)	Q2 At what price would you con- sider the product to be priced so low that you would make the purchase decision before the season? (Too cheap)
Category 1	2 %	100 %
Category 2	2 %	29 %
Category 3	3 %	13 %
Category 4	4 %	9 %
Category 5	4 %	0 %
Category 6	5 %	1 %
Category 7	24 %	1 %
Category 8	75 %	0 %
Category 9	100 %	0 %

	Q3 At what price would you consider the product becoming too expensive – so that it is not out of the question, but you would have to give some thought to buying it if you would get it at the time of need in the season? (Expensive/High Side)	Q4 At what price would you con- sider the product to be a bar- gain—a great buy for the money so that you would buy it before the season? (Cheap/Good Value)
Category 1	4 %	100 %
Category 2	5 %	63 %
Category 3	5 %	48 %
Category 4	7 %	45 %
Category 5	7 %	14 %
Category 6	9 %	12 %
Category 7	84 %	7 %
Category 8	94 %	3 %
Category 9	100 %	0 %