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**An Empirical Investigation of the Existence and Causes of Noticeable Price
Difference in Multi-Channel Retailers**

A Thesis Submitted in Partial Fulfilment of the Requirements for the Degree of

Doctor of Philosophy

Durham University

Business School

PhD in Marketing

Majed A. Helmi

2020

Abstract

Pricing strategy is one of the greatest difficulties facing multi-channel retailers (Gupta, Ting & Tiwari, 2019) as many retailers have switched to a multiple channel system (Ailawadi & Farris, 2017). Retailers are using their price strategies to encourage consumers to use either online or offline channels. Therefore, in many cases retailers want consumers to notice the price difference between channels. However, in some circumstances, retailers do not want consumers to notice the differentiation. Therefore, this thesis will answer two main research questions: How should optimal pricing be set for multiple channels that will make consumers more/less likely to notice price differentiation? What types of price presentation format are more/less likely to make consumers notice price differentiation?

Prior investigations have studied noticeable price differences by using differential price thresholds in a single channel (e.g., Cheng & Monroe, 2013a; Sirvanci, 1993) rather than studying differential price thresholds for a single product when there is one retailer and two channels. Multi-channel retailers use different monetary and non-monetary promotions as price presentation formats. Previous researchers have studied the roles of monetary and non-monetary promotions in the price-framing effect. However, so far no study has investigated the price effect of different promotion presentation formats on noticing differentiation. This thesis integrates just noticeable difference theory and prospect theory to investigate consumers' ability to notice price differentiation in different price presentation formats. It does so by conducting two experimental studies, each with 720 participants. It investigates the antecedent factors that influence the noticing of price differentiation in multiple channels.

The results of the thesis have important implications for the multi-channel literature and for managerial practice. They show that consumers are more likely to notice price differentiation when the difference between the (online and offline) regular prices is 20%. The results also suggest that there is a difference in noticing price differentiation in different monetary promotional formats. The thesis can guide marketing managers to set optimal prices for single products when there is one retailer and two channels. They can decide whether to use the same price in both channels or different prices in the different channels depending on whether their strategy is to attract consumers and increase purchase intentions by making the price difference noticeable or not.

Keywords: *Differential Price Thresholds; Multi-Channel Retailers; Channel Integration; Monetary and Non-Monetary Promotion*

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Chapter One: Thesis Introduction

1.1. Introduction

Advances in technologies and communication have influenced the retail sector in both online and offline channels. This impacts on traditional bricks-and-mortar retailers and online retailers such as Amazon Books, HMV and Argos. Where consumers' needs change with time, forcing retailers to adopt different approaches, especially in the face of high competition, ranging from a single operational mode to multiple channels. The multi-channel strategy provides options for consumers to buy products both in-store and online (Flores & Sun, 2014). Each of these channels is characterised by a different combination of multiple attributes that influence consumer choice (Chiang & Dholakia, 2003; Claxton & Ritchie, 1979; Hansen & Deutscher, 1978). The retail environment is undergoing an inescapable transformation after the advance of digitisation (Aw, 2019) as many retailers have switched to a multiple channel system (Ailawadi & Farris, 2017) which affect the strategies of price setting. Pricing strategy is one of the greatest difficulties facing multi-channel retailers (Gupta, Ting & Tiwari, 2019).

The rapid switch to multiple channel systems has created an issue for the consumer in terms of perceiving prices, especially online prices, because retailers compete with the pure-online retailer. Hence, when a consumer is shopping online from a multi-channel retailer, the price difference between channels will give the impression of discrimination between online and offline for the same retailer. At the same time, some retailers use the strategy of channel-based price differentiation to attract consumers to shop in the online or offline channels. Attracting consumers to shop online to offline is known as 'webrooming' (Verhoef et al., 2007). This starts with online browsing and then leads to buying in the offline store, whereas 'showrooming' starts with shopping offline and then leads consumers to buy from the online store (Fernández et al., 2018; Flavián et al., 2020). Therefore, without an optimal price strategy for a single product when there is one retailer and two channels it is possible to miss

opportunities provided by the multiple channel system to attract customers and increase their purchase intentions by understanding how they perceive a price difference and at what price thresholds they are more likely to notice price differentiation between the online and offline channels.

Retailers have been trying to increase their services in all channels to maintain their current customers and attract new ones (Hung, Cheng, & Chiu, 2019; Jones, Griffis, Schwieterman, & Daugherty, 2019; Kumar, Anand, & Song, 2017). Multiple channel retailers can include different formats such as physical stores (ranging from supermarkets to local markets to kiosks), online stores, catalogues (Kim & Park, 2005) and mobile apps (see Mohammed, 2017). Thus, the multiple channel approach provides consumers with two or more channels through which to purchase products (Chiu et al., 2016; Schoenbachler & Gordon, 2002). For example, many grocery retailers in the UK (e.g., Tesco, Sainsbury, Aldi and Asda) have adopted the multiple channel approach. These developments are highly notable not only in the grocery industry but also in other industries such as fashion, travel and telecommunications. Many consumers use both online and offline channels when engaging in purchase behaviour (Verhagen & van Dolen, 2009; Voorveld et al., 2016) and compare prices between online and offline channels (Bodur et al., 2015).

Since the internet became widespread, retailers have obtained opportunities to sell products online (Mosteller et al., 2014) and consumers have obtained many benefits from online shopping (Jiang et al., 2013) such as easily accessible, waiting in a queue is avoided and alternatives can be easily compared. Recently, online channels have tended to be part of a multi-channel strategy which provides equal and similar services in online and offline channels to keep customers in the face of intense competition (Yaraş et al., 2017). However, Wilding (2013) argues that the multi-channel system is often not connected because many retailers have switched to multiple channels to respond to fast-shifting e-commerce and information

technology developments. Saghiri, Wilding, Mena, and Bourlakis (2017) argue that when the online channel works independently of the offline channel it creates fragmented supply chains. In this case, retailers face difficulty in providing a consistent and reliable service to their consumers (Saghiri et al., 2017). The omni-channel system addresses this issue by coordinating processes and technologies across all channels. The aim of omni-channel is to provide seamless, consistent and more reliable services to customers (Saghiri et al., 2017; Verhoef et al., 2015).

This introductory chapter will first discuss previous research into strategic pricing. It will show the importance of having a price strategy when there are multiple channels and identify research gaps. This will be followed by explanations of the purpose and objectives of the current study, its theoretical foundation, the pricing and consumer response framework it employs, its contribution to the literature and the structure of this thesis.

1.2. Previous Research into Strategic Pricing

Price is an essential tool for both the retailer and the consumer (Ahmetoglu et al., 2014; Shantanu Dutta et al., 2002; Ranganathan & Ganapathy, 2002; Wu et al., 2014). Retailers with multiple channels have the options of setting the same price across all channels or applying different prices depending on the channel (Cavallo, 2017; Homburg et al., 2019). Multi-channel retailers aim to set optimal prices for the online and offline channels to maximise their total profit and attract customers (e.g., Cattani et al., 2006; Choi, 1991; Zettelmeyer, 2000). Most researchers agree that price is the main factor in a purchasing decision (Kim & Jang, 2013; Kohli & Suri, 2011; Qalati, Yuan, Iqbal, Hussain, & Ali, 2019; Varki & Colgate, 2001). Therefore, to meet customers' needs and satisfy them retailers should find an optimal price setting strategy.

Multi-channel retailers with offline and online distribution channels can ultimately determine their survival in the market through their price-setting strategy. Pure players (i.e., internet-only distributors) increase their pressure on price and set lower prices due to low capital costs (e.g., labour and rent). Therefore, multi-channel retailers face a significant dilemma and some large and renowned retail companies (e.g., RadioShack in the United States; Praktiker in Europe) have filed for bankruptcy due to the aggressive pricing strategy of a pure online retailer. Therefore, multi-channel retailers might consider setting different offline and online pricing levels (Homburg et al., 2019; Kireyev et al., 2017). The trend in recent marketing research suggests that there is a need to study price-setting, in particular “Which is the right price (...) in the right channel?” (see Homburg et al., 2019, p. 2).

Empirical research reveals that online prices do not match their offline price counterparts. Previous research has found that there can be a 60% difference between online and offline prices for the same retailer (Wolk & Ebling, 2010). A study also found that there are differences between online and offline by 9%-16% in comparison of prices for CDs and books (Brynjolfsson & Smith, 2000). For Example, shopping for tablet 10-inch android in the online websites (e.g. £60) lower than the physical store (e.g. £.70). In contrast, Flores and Sun (2014) find that retailers have the same price for all channels. For example, the new iPhone at Apple store will be the same price on online store. Clay et al. (2002) found prices are similar in 107 books for both online and offline channels. These two examples of price strategies differ because retailers need to set optimal prices for the online and offline channels which guarantee a price point at which the total profit is maximised and is acceptable to consumers. This may mean setting the same price or different prices for the two channels.

Brynjolfsson and Smith (2000) find price dispersion to be lower among online retailers than conventional stores. An empirical study by Tang and Xing (2001) suggests that price dispersion might be greater among traditional retailers than among online-only retailers. They

assume that when traditional retailers open online stores they may set different prices for the two operations. However, comparing 13 online channels and 2 physical stores, Clay, Krishnan, Wolff, and Fernandes (2002) find the same price for books in online and offline channels. In contrast, another comprehensive study finds that the prices of books and CDs online are 9%-16% lower than in conventional stores (Brynjolfsson & Smith, 2000). Morton, Zettelmeyer, and Silva-Risso (2001) find that online car prices are 2% lower than offline ones. Tang and Xing (2001) argue that one of the most important reasons for these differentials is that products may be distributed, allowing proxies to set prices to obtain part of the market share.

One study finds that many multi-channel retailers charge higher prices and offer fewer products online (Grewal et al., 2010) while other researchers find that online prices are generally lower than offline prices (Pan et al., 2002; Ratchford et al., 2003). However, few studies have empirically investigated price differences in online and offline stores. Flores and Sun (2014) study the variation between online and offline channels for the main office supply retailers in the USA, focusing on groups of products including machine supplies, office technology, filing and storage, paper, personal organisers and desktop accessories. Although they find an overall price ratio between online and offline stores for the different groups of products of 98.92%, they are unable to ascertain whether or not the prices in multiple channels are the same (Flores & Sun, 2014). It could be argued that as this study investigated the average prices for selected items, the results may change if a particular product is chosen across multiple channels for the same retailer.

Decision-makers encounter difficulties when setting a price model, particularly given the dearth of literature detailing the necessary procedures. Pricing models are complex, and in many cases pricing is found to be tricky, subtle or ambiguous (Yang, 2019). A price differentiation model caters for different customer price perceptions in terms of affordability and their engagement and preferences. Some of the challenges involved in price setting are that

prices may not differ and that they are not subject to physical stimuli. For instance, a pricing model may provide little incentive to buy (e.g., a 5% discount on a purchase of £200) or a similar discount to other competitors, which will not be sufficient to get the attention of customers (Yang, 2019).

1.3. Research Gaps

After having reviewed the literature on the effects of price behaviour and price framing on consumers in terms of just noticeable difference theory and prospect theory, a number of gaps are worth further examination. In the following will elaborate on the research gaps which related to how consumer notice price differentiation and how the impact of the promotion on price perceptions.

First, the extant literature on price behaviour investigates price format, bias or value by measuring differential price thresholds in the single-channel context (Cheng & Monroe, 2013a, 2013b; Sirvanci, 1993; Uhl & Brown, 1971) but neglects to study the effect of differential price thresholds between online and offline channels on noticing price differences and the price threshold at which consumers are more likely to notice price differentiation across channels. However, there are limited studies which investigate the price differentiation between online and offline channels (e.g., Fassnacht & Unterhuber, 2016; Flores & Sun, 2014). Investigating differential price thresholds when there is one product, one retailer and two channels will give a better understanding of the level of prices at which consumers are more likely to notice the price difference between channels, and enable multi-channel retailers to set optimal prices.

Obviously, many retailers provide different prices between their online and offline channels (e.g. Cavallo, 2017; Wolk & Ebling, 2010). For instance, they provide a lower price in online stores and increase the price for other products in the offline store. In this case, retailers set prices equal to or lower than their competitors' prices. Recent research reports that

the average size of price differences is small across different channels, only 1% on average (Cavallo, 2017). Hence, there is tension in the pricing behaviour of multi-channel retailers (e.g., Homburg et al., 2019). Overall, the use of different prices across different channels is an important issue facing retailers (Fassnacht & Unterhuber, 2016; Francesca Sotgiu & Fabio Ancarani, 2004; Paul & Beckmann, 2012; Wolk & Ebling, 2010). Previous studies identify the low level of differential price thresholds is 5% of price differentiation in the single channel (e.g., Cheng & Monroe, 2013b, 2013a; Sirvanci, 1993). This research argues this threshold might be changed in the multiple channels.

Second, previous studies have examined different price format monetary promotions by framing offers on the basis of the concept of gain and loss perception (Chang, 2018; Gal & Rucker, 2018; Higgins & Liberman, 2018; Morewedge & Giblin, 2015; Wang & Hazen, 2016). There are only limited studies that look specifically at price stimuli and how they influence behaviour in the multi-channel retailer context and there is a dearth of studies in the area of how channel integration influences the price framing effect. The current research extends Kahneman and Tversky's (1979) concept of gain and loss regarding price stimuli and noticing price differentiation in the context of online-offline channel integration. By combining just noticeable difference theory and prospect theory, managers and researchers who are interested in price strategy will have a better understanding of how different price presentation formats impact on noticing price differentiation in multiple channels, in particular retailers who are concerned about channel integration when setting their pricing strategy for online and offline channels.

Retailers use different monetary presentation formats to display their prices (e.g., regular price, discount price, or using the final digit '9'). Each of these formats has a different impact on consumer perceptions and frames the price differently (e.g., Drechsler, Leeflang, Bijmolt, & Natter, 2017; Gedenk, Neslin, & Ailawadi, 2006; Palazon & Delgado-Ballester,

2009; Sheng, Bao, & Pan, 2007; Sinha & Smith, 2000). Many researchers have investigated the effects of monetary and non-monetary promotion on consumer perceptions and find that they play the main role in the success of marketing plans (Banerjee, 2009; Palazon & Delgado-Ballester, 2009; Raghubir, 2005; Suri et al., 2000). Setting pricing strategies also includes determining the minimum price to quote (e.g., price cut) for different market segments for specific days and times to maximise profit (Adhikari, Basu, & Raj, 2013; Guillet & Mohammed, 2015; Mattila & Gao, 2016; Tellis, 1986).

Third, although some studies investigate the importance of non-monetary promotion in terms of gain and loss perception (e.g., buy one get one free or discount coupons), few studies compare monetary and non-monetary promotion in terms of price perception (e.g., Lowe & Barnes, 2012; Ma'Ruf, Tabrani, & Madjid, 2019; Reid, Thompson, Mavondo, & Brunsø, 2015; Yi & Yoo, 2011). However, there is a dearth of practical studies investigating the effects of antecedent factors behind displaying both price promotion formats with seasonal cues on noticing price differentiation in the context of online-offline channel integration. Hence, this study will fill the gap by empirically studying price stimuli to understand the interaction between monetary and non-monetary promotions in the context of channel integration and the effect on noticing price differentiation to discover how, where and what the optimal price strategy is to use for online and offline channels in terms of whether or not to display a seasonal signal beside promotional prices.

Despite the importance of semantic cues, there is dearth of studies on semantic cues as promotional attractions (Sanchez-Franco et al., 2019; Sinha & Smith, 2000). Retailers often use semantic cues during price reduction seasons (e.g., summer sales or Black Friday). Recent research has studied the time units used in countdowns in non-monetary promotions as time limits play a key role in marketing (Chou, 2019). Chou (2019) argues that temporal pressure

can increase consumers' perceived value (Peng & Liang, 2013) and intentions to purchase the product promoted.

1.4. The Purpose and Objectives of the Research

Multi-channel retailer often uses price setting to attract consumers to either online or offline and dealing with pure online retailers' price competition by differentiation price in target channel. Researches to date is unclear on how channel-based pricing strategy should be used and when to use that consumer can accept and willing to pay.

In general, retailers try to make price discounts more noticeable to attract customers or increase sales. In contrast, if the price has been increased retailers will try to hide the price differentiation because it can disadvantage sales or lose their current customers. For example, when retailers use a price discount as a promotional price, clearly consumers will notice that prices in different colours or with semantic cues refer to promotions, but in the case of price increases, retailers will try to hide the price differentiation as much as they can because they consider it to be a disadvantage to consumers that will affect their purchase intentions. Therefore, this thesis investigates what causes and outcomes of noticing price differentiation by integrating the just noticeable difference theory and prospect theory.

The practice of reducing product prices to stimulate buying behaviour is one of the most heavily used marketing strategies (Ailawadi et al., 2001; Chandon et al., 2000; Grewal et al., 1998; Sheehan et al., 2019). Consumers often evaluate a deal on the basis of many factors related to price perception such as price value (Biswas et al., 2002), price fairness (Darke & Dahl, 2003) and promotional price attractiveness (Chen, Monroe, & Lou, 1998; Hardesty & Bearden, 2003). Consumers may evaluate a current price using previous price experience as a reference point. A reference price is a price stored in a consumer's mind as a result of previous shopping experience (Emery, 1970; Kalwani et al., 1990; Krishnamurthi et al., 1992; Putler,

1992; Rajendran, 2009; Winer, 1986). According to Cheng and Monroe (2013a, p. 108), “a reference price is a dynamic, internal price to which an individual compares the offered price of a product or service.” When consumers notice differentiation in prices, it might impact on their perceptions in evaluating the deal.

A significant volume of marketing literature has studied the impact of price on consumer behaviour. Some of these studies examine the evolution of price thresholds of how influence individual’s perceptions of price for various products (Monroe, 1971a) and influence on price-consciousness (Monroe, 1973). Further studies have researched consumer responses to different price changes online and offline (Koufaris, 2002; Kwak et al., 2006; Pires et al., 2004). However, there is a lack of studies on price behaviour, especially in relation to price differentiation for one product when there is one retailer and two channels. Price fairness studies have covered many theoretical explanations (Malc et al., 2016). Prospect theory by Kahneman and Tversky (1979) explains negative reactions to perceived price unfairness precisely in the context of disadvantages, no advantages or inequality. For instance, Maxwell (2002) is mainly focused on fairness perceptions of the pricing process, not price differences (Malc et al., 2016). Despite the importance of these theories on price fairness it is important to study how fairness and other factors influence consumer perceptions from the perspective of noticeable price differences extended with prospect theory.

Repeating promotions has increased and become popular to connect two events together (e.g., Black Friday with Cyber Monday). This is not the only strategy to increase the number of promotion events and retailers are becoming more creative in inventing new events (e.g., Amazon Prime Day). This is due to the importance of promotion in consumer perception. It is highly notable that sales promotions have become more repetitive and last longer than before. Retailers seem to focus more on promotion (e.g. Bogomolova, Dunn, Trinh, Taylor, & Volpe, 2015) than on spending money on advertising. However, without setting an optimal price

strategy, a promotion might be dangerous for retailers. For instance, if the price discount percentage is not equal every time (e.g., in this period the discount is 50% and in the next period 20%) consumers may perceive the differentiation differently. At the same time, optimal price setting has become more difficult since retailers have become multi-channel retailers with high integration among all the available channels (see Ailawadi & Farris, 2017; Verhoef et al., 2015; Yurova et al., 2017; Zhuang et al., 2018).

Prior research has examined the effect of consistency of promotional prices. It has been found that when repeating promotions, later promotions are perceived as not such good deals as earlier ones. This is because consumers perceive prices returning to the original level after the end of a promotion period as a price increase. It has been concluded that consumer responses to gain and loss situations are asymmetric (Kalyanaram & Winer, 1995). Therefore, a promotion is perceived as a gain situation when the observed price value is below the internal reference price. In contrast, when the observed price is above the internal reference price it is perceived as a loss situation (Kalyanaram & Winer, 1995; Shams-Shoaaee & Hassini, 2020). Recent research has investigated the difference between multiple-discount promotions with a low percentage (i.e., 20% & 25%) and a single-discount promotion with a big percentage (40%). It has been found that a multi-discount promotion has a greater influence on attitudes toward the offer and purchase intentions than a single-discount promotion (Ammar & Alleil, 2019).

Many retailers offer price deals all the time. Consumer perceptions of particular deals are influenced by how the deal is offered (Chen et al., 1998; Krishna, Briesch, Lehmann, & Yuan, 2002) as well as the amount of the actual discount (Krishna et al., 2002). How retailers can develop better multiple-channel pricing to support their strategies is an issue still under consideration. Prior research has focused on price framing: how the deal is communicated to customers. There are several ways to present a deal such as using a monetary promotional price

– e.g., a 50% price cut – or using a non-monetary promotional price – e.g., buy one get one free. These two examples are different presentation formats but have equal discounts – save 50%. Many researchers have studied the difference between the influence of monetary and non-monetary promotion on the price-framing effect. Clearly, many retailers tend to use monetary and non-monetary promotion in many formats.

It is important for most industries to study different types of promotional formats to improve their price strategies to make their offers more attractive. Recent marketing practices rely on significant use of promotion tools in their marketing plans. Retailers use promotion tools in modern marketing practices because promotions catch the attention of potential customers and motivate them to make a positive purchase decision (Sinha & Verma, 2020). Monetary promotions involve a promotional price that allows consumers to purchase a product at a lower price. This attracts them by giving them the opportunity to save money (Sinha & Verma, 2020). One of the most popular monetary promotion formats for many retailers is the external reference price (i.e., was £ /now £). It can be argued that displaying the external reference price along with the price offered might make the consumer perceive that the deal is a gain situation. Another example of how different monetary promotions influence the framing effect is percentage vs. dollar. Chen et al. (1998) show that a ‘percentage’ is more effective for low priced items and ‘dollar’ is more effective for high priced items. Therefore, ‘percentage’ and ‘dollar’ framings have different effects on consumers.

It goes without saying that offering different price formats impacts on consumers’ perceptions. Researching price differentiation leads to a deeper understanding of consumer price behaviour. As Cheng and Monroe (2013a) explain, price behaviour refers to how consumers perceive, remember and use price information so it is related to price factors, not pricing strategy. Therefore, the current thesis will fill these gaps to contribute to the areas of

setting optimal multiple-channel price strategies and how monetary and non-monetary promotions influence purchase intention in the case of price differentiation.

To examine noticing price differentiation in different conditions to answer the two main research questions, two experimental studies are conducted in this thesis. The first study answers the research question of how to set optimal pricing for multiple channels that will make consumers more/less likely to notice price differentiation by identifying differential price thresholds between online and offline deals to answer the following sub-questions: What are the price thresholds for consumers to notice price differentiation in the two channels? What are the price thresholds for consumers to notice price differentiation when conditions are applied (promotional price vs. regular price)? How do consumers perceive the fairness and value of price differentiation in multiple channels? The second study will answer the research question of what types of price presentation format are more/less likely to make consumers notice price differentiation by investigating noticing price differentiation in different promotional price formats and with different semantic promotion cues for the same deal with monetary and non-monetary promotions in the context of online-offline channel integration in the fashion industry.

1.5. Theoretical Foundations

Psychophysics has long studied the measurement of individuals' response thresholds to physical stimuli (Monroe, 1971a). Research has been extended to study the deeper relationship between stimulus and sensation (Gescheider, 2013). Arguably, dramatic price changes and changes in purchase behaviours have made the study of behavioural prices important to understand in many disciplines, especially in the marketing field. The current research applies just noticeable difference theory and prospect theory to a price change in multiple channels for the same retailer from a consumer behaviour perspective.

First, the just noticeable difference theory can be used in several domains such as the psychology of perception, consumers' behaviour and marketing practice. It is important to apply just noticeable difference theory in order to understand differential price thresholds between online and offline deals and the extent that consumers notice price differentiation and how they react towards price differentiation in terms of their perceptions of price value and fairness. Noticing price differentiation means that a change in price will become recognisable if the stimulus value reaches a certain threshold (Monroe, 1973). The stimulus value refers to the magnitude represented by numbers. However, if the change in price is below the threshold it will be not recognisable (Gupta & Cooper, 1992). A differential price threshold is the minimum amount of price change necessary to produce the phenomenon of "just noticeable difference" (Monroe, 1973, p. 74). It can be argued that the level of differential price thresholds can be different when compare single channel with multiple online and offline channels.

Consumers have a reference price range which they use to evaluate a deal (Kalyanaram & Little, 1994; Monroe, 1971a; Monroe & Lee, 1999; Rajendran, 2009). When the price is outside the acceptable price range they consider it expensive or the product low quality depending on whether it is outside the higher or lower price threshold (Monroe, 1971a; Sherif & Hovland, 1953; Zeithaml, Parasuraman, & Berry, 1985). Many researchers have found that consumers accept price differentiation between online and offline channels and consider it fair because there are different operating expenses for each channel (e.g. Fassnacht & Unterhuber, 2016).

Second, prospect theory considers gain or loss situations (Kahneman & Tversky, 1979) where the prospect theory plays an important role in monetary and non-monetary promotion perception (Lowe & Barnes, 2012) so the way of presenting the deal is might perceive differently. For example, the promotional price perceives more gain than regular price. Many studies cite Kahneman and Tversky's (1979) theoretical background of how different

promotional presentation formats affect price framing. One of the concepts in prospect theory is perceived gain and loss situations. Also, the way of presenting products and price in the online channel is different than offline channel, which might influence the consumer to perceive the online and offline prices differently and lead to notice the price differently.

To sum up, this thesis integrates the just noticeable difference theory and prospect theory to understand how likely consumer notice price differentiation of different conditions in the multiple channel retailer. The thesis argues that there are antecedent factors that influence the noticing of price differentiation in the context of multiple channels, including differential price thresholds and the role of promotional presentation formats.

1.6. Overview of the Research

This thesis seeks to investigate noticing price differentiation in the context of one product, one retailer and two channels. The thesis determines the important price stimuli that influence consumers so that they notice differentiation.

First, it examines noticing price differentiation by comparing the online and offline channels to identify the price threshold at which consumers are more likely to notice differentiation between the channels. It also examines noticing price differentiation by comparing the reaction of groups to differences between a promotional price and the regular price for three price thresholds. The experiment in study 1 makes it possible to compare the consumer perception of price value and fairness when noticing price differentiation between the online and offline channels by the same retailer. Price perception, in particular price fairness, is considered fundamental in the evaluation of any pricing system (Richards et al., 2016). This is an essential topic not only in economics studies (Rotemberg, 2011) but also in marketing studies (Xia et al., 2004). Study 1 investigates the individual differences of price

perceptions including price sensitivity and the acceptable price range when comparing between online and offline channels.

Recently, Zhuang, Popkowski Leszczyc, and Lin (2018) have observed that when a retailer offers similar products with similar quality in both online and offline channels, the price dispersion for these products online is greater than in the offline channel. Price dispersion refers to a differentiation in prices set by different retailers of the same product in a particular market (Hopkins, 2008). Zhuang et al. (2018) state that this observation is inconsistent with early theories which suggested price dispersion online would be smaller than offline because of the easy access to online information. They explain that these developments are due to recent trends in multi-channel and omni-channel retailing. Their suggestions regarding these developments point to a need to study price dispersion/price differentiation among multi-channel retailers (Zhuang et al., 2018).

The second study in this thesis seeks to understand noticing price differentiation in different monetary and non-monetary promotions when the price is increased to a specific level determined in study 1. Study 2 examines how noticing differentiation impacts on purchase intentions. Some retailers are concerned that noticing price differentiation across channels might influence purchase intentions (Blake et al., 2018). Study 2 considers the importance of online-offline channel integration, so it applies high and low channel integration to different groups.

1.7. Contributions

Through its two main research questions, this research contributes significantly to the body of knowledge on just noticeable difference theory and prospect theory in the context of multiple channels. Some studies investigate the price difference between online and offline channels (e.g., Wolk & Ebling, 2010) and how the price compares between channels for the same

retailers (e.g., Flores & Sun, 2014). However, there is an increasing trend to study multiple channels and many researchers pay more attention to the multi-channel context (e.g., Verhoef, 2012; Verhoef et al., 2015). Chiou, Chou, and Shen (2017) suggested that for future research it is important to examine the effect of different prices on consumer decisions in the multiple channel context and their possible impact. The following part will describe the main contributions of this thesis.

First, this research compares the online and offline channels for the same retailer to identify the high level of differential price thresholds in the multiple channels. Although some studies have empirically investigated and identified the low level of differential price thresholds in the single channel, no research has yet compared the online and offline channels for the same retailer to identify the price threshold that makes it more likely that price differentiation between the online and offline channels will be noticed. Identifying the differential price thresholds for a product when there is one retailer and two channels will support decision-makers in setting optimal prices for the two channels. This thesis also develops a measure to examine the effects of different levels of price thresholds in online and offline channels on noticing price differentiation.

The second contribution of this study on just noticeable difference and prospect theory is how different price presentations impact on noticing price differentiation. It examines noticing price differentiation by experimentally comparing a promotion price with a regular price at different levels of price threshold. This will help marketing managers in their decisions on whether to use regular prices or promotional price formats in their marketing strategies.

Third, this research contributes to knowledge regarding how different monetary and non-monetary promotional price formats influence the consumer to make price differentiation less or more likely to be noticed in the context of online-offline channel integration. Although many researchers have investigated different formats of monetary and non-monetary

promotion that apply the same amount of discount, the context of online-offline channel integration has not been considered. This research also considers noticing price differentiation when seasonal cues are displayed with the promotional price.

Finally, the mediators of consumer perception affect purchase intentions differently in situations in which it is noticed that a price has increased or decreased. The three mediator factors affecting purchase intention when consumers notice price differentiation are value fairness, a quality relationship and promotional price attractiveness.

1.8. Thesis Structure

This thesis consists of seven chapters. These are organised in such a way as to systematically present the manner in which the research questions are proposed and answered.

Chapter One has provided an introduction to the focal issue, addressing the significance and motivations behind noticing price differentiation in the context of multiple channel systems and channel integration. This chapter has reviewed previous research on strategic pricing and described the purpose and objectives, theoretical foundation, research framework, potential contributions and intended research method of the present study.

Chapter Two and Three provide a literature review of relevant studies in the domain of price perception. Relevant theories that contribute to explaining noticing price differentiation are discussed together with justifications for just noticeable difference theory and prospect theory. The research framework and development of the hypotheses of the thesis have illustrated in the Chapter Three.

Chapter Four discusses the research philosophy and overall methodological approach of the thesis, the procedures employed and product categories.

Chapter Five and Six discuss the design of each study and its results. It includes the specification of a scenario-based experiment with a detailed description and the measurement of the variables, which is followed by an examination of the research hypotheses.

Chapter Seven contains a general discussion. It provides an overview summary and draws conclusions. It also discusses the theoretical contributions and managerial implications of the thesis and then its limitations and future research directions.

1.9. Chapter Summary

The introductory chapter of this thesis has given an overview of the significance, motivations and rationale behind the research topic. The scope and context of this research study have also been briefly discussed. Following this, the objectives of the thesis based on key findings from previous research into setting an optimal price to reduce noticeable price differences have been described together with gaps in the literature and the importance of the two main research questions. The thesis's framework for studying pricing and consumer responses has been briefly discussed and the potential contributions of the thesis have also been addressed.

Chapter Two: Literature Review

2.1. Introduction

This thesis aims to identify differential price thresholds in different channels for the same retailer and how various promotional price presentation formats influence noticing price differentiation. The thesis investigates the noticeable price difference of three price thresholds. It also examines different promotional price presentation formats that already exist in markets and their importance in determining the optimal price for one product and one firm in different channels. Although the previous chapter has discussed the research gap by providing a brief overview of previous studies related to noticing price differentiation, there is a need to understand how just noticeable difference theory relates to other theories that impact on consumer perceptions of different price formats.

Just noticeable difference theory is concerned with the detectable difference between weights (Dehaene, 2003). A just noticeable difference between two objects happens when adding a small quantity to one object above a certain amount allows its difference to another object to be noticed (Vastani & Monroe, 2019). Many researchers in marketing subjects have studied just noticeable differences in features such as quality, size, colour and price (see, Britt, 1975). On the other hand, researchers have studied promotional prices and how different formats influence the framing effect by using prospect theory. Prospect theory focuses on the perception of gain and loss situations (Kahneman & Tversky, 1979).

Price differentiation is an important aspect of firms' marketing strategies. Companies can decide to increase or decrease their prices depending on the circumstances (e.g., economic crisis or competitive imperatives) (Lim et al., 2018; Prabhu & Stewart, 2001). When some companies want to increase their profits, they increase their price and price increases are considered the most effective marketing instruments to increase profits (Meehan et al., 2012).

Interestingly, few studies focus on price increases from a consumer perspective (e.g., Campbell, 1999a; Homburg, Hoyer, & Koschate, 2005a; Kahneman, Knetsch, & Thaler, 1986a, 1986b). There are still research gaps in the area of the impact of price increases on consumer behaviour (Homburg et al., 2005a) and how likely it is that consumers notice price increases.

Researchers suggest that understanding differences among some practices considered to be deception should benefit retailers in several ways (Diallo & Lambey-Checchin, 2017; Riquelme et al., 2016). First, retailers will be aware of the consequences of consumers perceiving deception. Second, knowing how consumers perceive deception in some practices (e.g., increasing prices) will allow retailers to develop better strategies and avoid negative potential consequences in each channel (Riquelme et al., 2016). There are important negative consequences for the retailer when consumers find practices deceptive such as complaints, dissatisfaction, switching behaviour, negative word-of-mouth and distrust. This might lead to subsequent damage to the company's reputation in the future. Román (2010) argues that the consequences of perceived deception of the consumer may differ between online and offline stores. Reports on the internet show that numbers of complaints and dissatisfied consumers have increased, which might be because of deceptive practices (e.g., deceptive promotions) by some firms (see Riquelme et al., 2016 for a review).

The objectives of this thesis are to address the following questions: How should optimal pricing be set for multiple channels that will make consumers more/less likely to notice price differentiation? What types of price presentation format are more/less likely to make consumers notice price differentiation? Therefore, the main argument of this thesis on noticeable price differentiation in multiple channels is based on just noticeable difference theory (Cheng & Monroe, 2013a; Monroe, 1973) and prospect theory (Kahneman & Tversky, 1979), in which consumers frame prices in gain and loss situations.

This chapter is organised as follows. The first section discusses previous research on price differentiation and consumer perceptions of it. Next, section two explains how just noticeable difference and prospect theory applied to marketing studies are used as a theoretical foundation for the thesis. The third section presents the antecedent factors that influence noticing price differentiation and consumer perceptions.

2.2. Previous Research on Price Differentiation

This section will first provide a clear definition of price differentiation. Then it will illustrate how consumers respond to price in general, followed by consumer perceptions and outcomes of noticing price differentiation.

2.2.1. The Definition of Price Differentiation

The terms price differentiation and price discrimination can be treated as synonymous, but they are used differently. Price discrimination is defined by Stigler as occurring “when two or more similar goods are sold at prices that are in different ratios to marginal costs” (Stigler, 1987, p. 210). Price discrimination is one of the most common forms of marketing practices (Mauri et al., 2019). Price discrimination also refers to providing the same product with different prices depending on consumers. Hence, price discrimination has played a major role in important developments in economic theory (Ekelund, 1970).

In contrast, price differentiation is when retailers provide the same product at a different price in different channels which is also called channel-based price differentiation (Vogel & Paul, 2015; Wolk & Ebling, 2010). Price differentiation can allow companies to provide a different price to attract consumers (Vogel & Paul, 2015) or increase sales (Vogel & Paul, 2015; Wolk & Ebling, 2010) in a particular channel either online or offline. For instance, a retailer may only provide a discount for online purchases. In this case, the retailer wants the consumers to notice that the discount is only in the online channel. On the other hand, retailers

do not want consumers to notice price differentiation due to a price increase. Therefore, the current thesis defines price differentiation as an increase in the original price regardless of whether the price differentiation happens in the online or offline channel for the same retailer.

2.2.2. Consumer Perceptions of Price

The general assumption of price theory is that prices influence consumers' purchasing decisions because the price is an indicator of the cost to the consumer (see Monroe, 1973; Monroe & Chapman, 1987). The most significant factor that consumers concentrate on when evaluating a product is its price (Carmon & Ariely, 2000; Monroe, 1990; Ofir, 2004). Therefore, consumers have internal norms to judge prices (Cheng & Monroe, 2013a) and when the price of a product reaches the highest level of buyer satisfaction, the buyer will ignore alternative products, particularly if the consumer knows the prices of alternative products (Monroe, 1973). However, Monroe (1971b) argues that consumers do not have accurate information on all product prices.

Consumers have become particularly careful and aware of price and alternative product choices. Before purchasing a product, consumers might compare prices online to find the best price for similar products. Hence, consumers now rely on internet prices because the prices and information are more transparent (Chiu et al., 2016). Consumers pay attention to important factors when comparing and evaluating products, such as discounts (Diamond, 1992), quality (Ragaet et al, 2004) and size (Oppewal & Koelemeijer, 2005). Prior studies agree that the fundamental determinants of shopping behaviour and product choice are perceptions of value, quality and price (Bishop, 1984; Monroe & Krishnan, 1985; Schechter, 1984; Zeithaml, 1988). Although there is much research in the area of the importance of shopping online, there is a lack of studies in the area of how consumers evaluate the prices of multi-channel retailers, whose competition with pure online retailers has become more aggressive. Therefore, the following subsection will first discuss how consumers evaluate and perceive prices in general

in different channels. It will then move on to how consumers evaluate prices in multiple channels.

One of the most important areas that marketing researchers have concentrated on is behavioural pricing research, which deals with psychological perceptions of price regarding how consumers perceive, evaluate and respond to price offers (Estelami & Maxwell, 2003). In early studies, Monroe (1973) identified four fundamental concepts in behavioural price research: reference price, differential price threshold, absolute price threshold and acceptable price range (Monroe, 1973). The original theories on these concepts derive from psychophysics. The following will briefly illustrate the four concepts. Later, this chapter will discuss these concepts as antecedent factors and how they are employed in this thesis on multiple channels.

The reference price can be explained as the price point from previous purchase experience that the consumer uses to evaluate the current price (Han et al., 2001). According to Rajendran (2009, p. 18), “the reference price is the price standard used by consumers to judge prices.” The differential price threshold is the price level at which a minimum amount of change in price is detected by the consumer and affects consumer behaviour. Any individual has upper and lower limits to judge prices based on the upper and lower absolute price thresholds. The acceptable price range is referred to as the latitude of price acceptance. Consumers often use internal norms to judge prices and when the internal price is below a threshold, they do not perceive price differentiation (Cheng & Monroe, 2013a). Empirical studies show that there is a differential price threshold within the acceptable price range, which has a significant impact on the purchasing decision (Fouilhé, 1960; Gabor & Granger, 1966; Monroe, 1971a; Sherif, 1963).

Differential price thresholds are very important to understand how consumers will react when prices change. Later studies confirm that consumers have an acceptable price range

(Monroe, 1971a; Zeithaml et al., 1985). Researchers highlight that within the acceptable price range consumers do not perceive price differentiation. They pay more attention to the upper and lower levels of the price range but neglect price differentiation inside the range. Zeithaml et al. (1985) highlight that a price at the upper end of the range may reduce purchasing intentions but if the price is in the lower part of the range the buyer may purchase more of the same product or else may think that the product is of poor quality.

There is a general belief that online prices are lower than physical store prices, or at least online shopping is associated with perceptions of a better price (Brynjolfsson & Smith, 2000). This thought reflects the lower overheads in online operations (Fassnacht & Unterhuber, 2016). However, why do consumers use both online and offline stores? There are many reasons why consumers use traditional (offline) stores, such as the ability to check product quality, shape and smell. These reasons encourage online-only stores, such as Amazon, to open physical (offline) stores.

The online channel provides consumers with richer and more accessible product information (Brynjolfsson & Smith, 2000), convenience and customer service (Yang et al., 2016), availability and variety (Ghose et al., 2006). Online prices have greater transparency, which makes consumers able to compare pricing with ease and reduce search costs. Consumers expect to receive the lowest price for similar products in online shopping (Lo et al., 2014). The popularity of using the internet and the rising tide of e-commerce using smartphones have influenced consumption patterns and information dissemination modes (Chiu et al., 2016). This has encouraged consumers to shop online more conveniently and save the cost of shopping in offline stores (Chiu et al., 2016). Shopping online enables consumers to compare prices across online retailers with just a few clicks. The reduction in time and location constraints fundamentally distinguishes online shopping from traditional shopping formats (Sheth & Sisodia, 1999).

Online shopping gives consumers the ability to encode prices as cheap or expensive with confidence and more easily as they have as much access as they require to different retailers to compare their online prices and find competitors' prices. On the other hand, consumers in offline stores may not be able to encode and evaluate prices with as much confidence and as easily as in the online channel because of an inability to recall accurate prices. However, the simple concept of online platforms characterised by completely transparent prices where price differentiation can be noticed might be perceived as unfair, resulting in loss of trust and credibility, which leads to reduced purchase intentions (e.g., Garbarino & Lee, 2003; Haws & Bearden, 2006; Kannan & Kopalle, 2001; Richards et al., 2016; Rotemberg, 2011).

The popularity of the internet is due to its accessibility virtually anywhere and anytime (e.g., on smartphones), which makes it much easier for consumers to shift between online and offline shopping (Limayem, Khalifa, & Frini, 2000; Yang et al., 2016). Some consumers prefer shopping online for bulky and heavy items, thereby eliminating the physical burden of handling the products. Instead of putting the purchase in a basket and carrying the heavy item home, consumers can purchase it online and receive it direct to the door. These items tend to be the top-sellers in the online channel (Campo & Breugelmans, 2015; Chintagunta et al., 2012). Some consumers find that online shopping is much quicker than visiting offline stores. Online shopping gives consumers a greater range of features (Levin, Levin, & Heath, 2003).

One of the most important reasons for shopping online is the promise of greater savings. Reed (1999) reports that 85% of consumers look for price information when shopping online. Therefore, price becomes the main driver of decision-making in both online and offline shopping (Chiang & Dholakia, 2003). Thus, consumers have the choice between comparing prices online and selecting a lower price or going to stores for personal service to meet their needs.

Factors that influence whether the consumer realises there is a change of price are the importance of the product, its price stability and the frequency of purchase (Uhl & Brown, 1971). It seems that consumers double-check the price online of unfamiliar products with which they have high involvement, but do so less for low involvement categories (e.g., groceries, beauty products and cigarettes) (see Benn, Webb, Chang, & Reidy, 2015; Gursoy, 2019; Ratchford, Talukdar, & Lee, 2001). For instance, many grocery shoppers have developed habitual purchase behaviours. They may use a choice of heuristics to simplify their decision processes (Hoyer, 1984; Hoyer & Brown, 1990; Melis et al., 2016). In this situation, consumers who practice habitual purchase behaviours may not notice price differentiation if the price changes because they do not pay attention to the price, particularly if the price falls within the acceptable price range. A number of studies find that decisions in relation to grocery purchases tend to be less-price sensitive when using online channels (e.g., Chu, Chintagunta, & Cebollada, 2008; Degeratu et al., 2000).

Thus, four fundamental concepts are very important to understand how consumers think and react to prices. Physical stimuli provide information to consumers about the price both emotionally and cognitively. Therefore, the price that consumers pay is very important because they will sacrifice that amount to get the product (Cheng & Monroe, 2013a). There are two perceived sacrifices that consumers make in their purchase behaviour: monetary and non-monetary. The monetary sacrifice is the price paid for the product, while the non-monetary sacrifice is the cost to the consumer in terms of time, effort and psychic sacrifice (Chiu et al., 2016; Zeithaml, 1988). For instance, time and effort sacrifices can happen if the consumer does not find the product on the shelf, needs to travel a distance to buy the product, or needs to make an effort to assemble or prepare products. All these obstacles are considered non-monetary sacrifices. They are not the only sacrifices consumers can make. A psychic sacrifice is made if

after expending effort and time to get the product it does not provide the consumer with satisfaction (Zeithaml, 1988).

A non-monetary sacrifice is more apparent in online shopping when a consumer purchases an unfamiliar product from an unknown online store (e.g., Huang, Schrank, & Dubinsky, 2004). In this case, the consumer might feel insecure about the website for fear of fake shops. This might encourage the consumer to shop in physical stores. However, when purchasing an unfamiliar product from a recognised store with multiple channels, consumers may feel more secure in purchasing online because if they do not like the product they can easily go to the physical store and return or exchange the product rather than send it back to the online store. Therefore, studies find that the use of multiple channels can play a major role in store choice decisions (Brynjolfsson & Smith, 2000; Degeratu et al., 2000; Melis et al., 2015). Research shows that price is the consumer's perceptual representation or subjective perception of the objective price of the product (Jacoby & Olson, 1977). It is argued that consumers' perceived price influences their choice of shopping channels (Chiang & Dholakia, 2003). Therefore, when consumers compare the cost between online and offline channels, they consider all costs, including travel and shipping costs.

Consumers prefer cross-shopping behaviour in both offline and online stores (Alba et al., 1997) to perceive different values and maximise benefits (Chiou et al., 2017). The main differences between offline and online channels depend on their abilities to provide consumers with services at minimum costs (Betancourt et al., 2016). Hence, some multi-channel retailers use the strategy of channel-based price differentiation to balance between increased profits and a higher level of consumer satisfaction. Many studies confirm that a small percentage change in price can increase profitability substantially (e.g. Kohli & Suri, 2011). Although the possibility of using different price strategies online and offline increases the retailer's profit,

Dekimpe, Hanssens, Nijs, and Steenkamp (2005) demonstrate that small price increases lead to substantial short-term and long-term consumer reactions.

If consumers notice price differentiation, one of their potential reactions might be to leave the retailer and go to other retailers. It can be argued that with increasing competition and a variety of brands of the same items, consumers may not rely on only one retailer and one brand but might purchase from different retailers and not purchase the same brand every time. Hence, if consumers notice a price difference their behaviour regarding that retailer will be negative. The next section will discuss consumer perceptions of noticing price differentiation.

2.2.3. Consumer Perceptions of Noticing Price Differentiation

One recent trend in marketing research is to investigate the interaction between price differentiation across channels and consumer perceptions (e.g., Gensler, Neslin, & Verhoef, 2017; Homburg et al., 2019; Vogel & Paul, 2015). There is interest in consumer reactions to price differentiation between online and offline channels, especially with the use of innovative technology such as price comparison apps (Fassnacht & Unterhuber, 2016; Flores & Sun, 2014; Paul & Beckmann, 2012).

Fassnacht and Unterhuber (2016) find that in general consumers do not think that it is unfair for the same retailers to charge different prices in different channels. They argue that consumers consider that different prices reflect different costs of the service. Therefore, this belief may determine consumers' reactions when facing a price difference between different channels (Fassnacht & Unterhuber, 2016), particularly when they expect to obtain lower prices online (Jensen et al., 2003). However, this assumption may not work in all cases, such as when online prices are higher than offline ones (Fassnacht & Unterhuber, 2016). Similarly, Huang, Chang, and Chen (2005) argue that it is unfair to sell a product online and offline using the same price. They posit that retailers can charge higher prices in offline stores because of the

extra costs involved in maintaining these stores. However, there is less justification for charging higher prices online because of the high competition and lower running costs.

Some studies suggest that consumers' perceptions of price increases are contingent on other factors (e.g., Bolton & Alba, 2006; Campbell, 1999a, 2007; Sujay Dutta, Yaprak, & Grewal, 2017; Homburg et al., 2005a; Kwak, Puzakova, & Rocereto, 2015). For example, they might consider it fair to increase the price of food after a natural disaster. In contrast, they will perceive unfairness if the price increases due to high demand (Xia et al., 2010).

Pricing plays a critical role in marketing managers' decisions, as a small price change can significantly impact profitability. Whether a price is increased or decreased, total profitability will be affected in the end (Bechwati et al., 2009). This drives marketing managers to establish efficient and effective product pricing strategies (Campbell, 1999a). One of the factors that marketing managers consider is how consumers are likely to respond to different levels of price and to eventual price changes. Evidence suggests that the psychological foundations of price perception are important and that some factors impact on consumers responses (Kamen & Toman, 1970; Monroe, 1973).

In one example, Amazon.com charged different prices for the same DVDs on different purchase occasions and this led to perceptions of price unfairness (Adamy, 2000). This case aroused uproar and was a public relations nightmare for the firm (Xia et al., 2004). Haws and Bearden (2006) recommend paying more attention to research on consumer feelings about price fairness. Some evidence suggests that consumers may judge and evaluate the current price based on the past price to see how appropriate it is and use current prices to predict prices in the future (Briesch et al., 1997; Jacobson & Obermiller, 1990). Kuo, Rice, and Fennell (2016) show that consumers use a multitude of reference prices and processes to compare prices to a normative social standard during the process of evaluating price fairness (Kahneman et al.,

1986a, 1986b). They argue that these strategies develop over time due to the existence of price discrimination (Kuo et al., 2016).

Uhl and Brown (1971) state that perception is an important concept in consumer behaviour because consumer responses to any change in market conditions depends on the level of consumer awareness. One of the most important stimuli is a price change. According to Uhl and Brown (1971, pg. 175), “perception of a price change is an antecedent condition for a change in consumer behaviour.” However, consumers may not perceive all price changes (Uhl & Brown, 1971).

Richards et al. (2016) seek to understand a number of factors that determine how consumers frame price-fairness perceptions. These factors are: consumers' previous experience with the product or retailer (Bolton, Warlop, & Alba, 2003; Darke & Dahl, 2003; Rondan-Cataluña & Martin-Ruiz, 2011; Shehryar & Hunt, 2005); competitor prices (Bolton et al., 2003); loyalty to the retailer (Martin et al., 2009); the procedures used to set prices (Kukar-Kinney et al., 2007; Maxwell, 2002; Shehryar & Hunt, 2005; Tsai & Lee, 2007; Xia et al., 2004); the motives inferred for setting prices (Campbell, 2007); interpersonal differences in price perceptions (Anderson & Mellor, 2008; Ashworth & McShane, 2012; Darke & Dahl, 2003; Haws & Bearden, 2006; Ordóñez, Connolly, & Coughlan, 2000) and cultural differences among consumers (Bolton, Keh, & Alba, 2010). Therefore, a recent study develops an experimental simulation of a market organised on a discriminatory pricing platform to evaluate interpersonal differences regarding reactions to prices paid and pricing mechanisms (Richards et al., 2016).

Many researchers have shown that perceptions of price unfairness influence attitudes to the seller (Maxwell, 2002), influence consumer choice (Sinha & Batra, 1999) and impact on consumer satisfaction (Oliver & Swan, 1989). It should be mentioned that some pricing practices intended to attract new consumers are later perceived by them as unfair, such as

attracting them by offering discounts or off-season offers (Bechwati et al., 2009). Many studies investigate price fairness regarding price increases (Martin et al., 2009; Vaidyanathan & Aggarwal, 2003) and focus on how firms justify price increases to their customers (Bolton et al., 2003; Campbell, 1999a, 2007; Kuo et al., 2016). Current research is addressing the issue and measuring different price levels to investigate how consumers are likely to respond to price changes.

Another important variable in consumer perceptions is price value. Often consumers seek to maximise the value of a transaction. Prior research defines price value from the consumer perspective as the total of what consumers think they have monetarily sacrificed compared with the benefit they have received from buying the product or service (Zeithaml, 1988). Value is an assessment of both costs and benefits (Sweeney & Soutar, 2001). Ali and Bhasin (2019) argue that although perceived value is related to perceived monetary sacrifice, it is also related to the time and effort required to get the product. They state that “value is defined as the sum of all factors, subjective and objective, qualitative and quantitative, that make up the complete shopping experience” (Ali & Bhasin, 2019, p. 5). They also assume that perceived value leads to a purchase intention (Ali & Bhasin, 2019).

The marketing literature shows that perceived value and consumer satisfaction are closely related constructs (e.g., Bolton & Lemon, 1999; Fornell, Johnson, Anderson, Cha, & Bryant, 1996; Johnson, Herrmann, & Huber, 2006). The monetary cost or the price is usually related to the quality of products to determine their perceived value (Zeithaml, 1988). Therefore, price setting is one of the most difficult tasks for managers to maximise consumer benefits from purchasing a product (Venkatesh et al., 2012). It can be argued that consumer satisfaction may reduce negative reactions to noticing a price increase or consumers may not react at all.

Furthermore, there are important drivers of promotional effectiveness in consumer perceptions. The first is deal planning, which includes promotion timing, promotion depth and promotion event duration. The second is deal framing, for instance the deal price cut (quantity of discount), a loyalty programme or non-monetary promotion (Sotgiu, 2010). Hamilton and Chernev (2013) study the role of price image formation in decisions but do not find promotional formats as price stimuli affect noticing price differentiation. Breugelmans and Campo (2016) argue that using estimation results to simulate the effect of different promotion scenarios might help multi-channel retailers improve their strategies and the synergies across their online and offline channels (e.g., optimal price setting) and find the most effective promotion. Most prior studies have focused on the effect of cross-competitive promotion on consumers' choices of a brand or retailer online or offline (e.g., Ailawadi & Neslin, 1998; Bell, Chiang, & Padmanabhan, 1999; Blattberg, Briesch, & Fox, 1995; Breugelmans & Campo, 2016).

For example, Chen et al. (1998) show that the percentage in a discount promotion influences price attractiveness. They argue that the higher percentage of a price discount, the more attractive a price promotion is when compared to relative price promotions at different price levels. However, the percentage is often not a suitable promotion method because in some industries (e.g., the fast fashion industry) consumers are more likely to respond to a price cut instead of the percentage. In an early study, Grewal and Marmorstein (1994) found that 68% of their participants were willing to drive to other branches to save 5 dollars on a \$15 calculator but only 29% were willing to drive to other branches to save 5 dollars on a \$125 jacket. The participants therefore seemed to evaluate the attractiveness of a promotion based on the relative proportion of the discount. Recently, a study has found that consumer perceptions such as perceived price fairness, satisfaction and trust affect purchase intentions (Konuk, 2018). Therefore, the next section will deal with the outcomes of noticing price differentiation.

2.2.4. Outcomes of Noticing Price Differentiation

There are three major disciplines involved in theorising the purchase behaviour point for high involvement products. More information is needed about these products because there is high risk if a faulty decision is made. The first discipline is classical economics, in which it is assumed that consumers have good knowledge about the prices of alternative products. Second, marketing science models assume that consumers know the price at which they are willing to purchase and are aware of any price reductions (Guadagni & Little, 1983; Winer, 1986). The third area is psychological theories of consumer information processing. These assume that the price purchase point will be evaluated, integrated in memory and encoded for the next purchase transaction (Dickson & Sawyer, 1990). It can be argued that low involvement products such as groceries or fast fashion products have low risk and if consumers make a wrong decision they may not regret it so much when dealing with high involvement products such as a car or a house. Therefore, consumers might not store prices for low involvement products, which leads to a reduced probability of them noticing a price change.

Consumers may have different reactions when facing price differentiation in shopping. Kamen and Toman (1970) study consumer attitudes from the fair price theory perspective. The fair price theory is concerned with the value fairness of products. Kamen and Toman use price levels to measure price differences. The main purpose of their study is to test propositions about consumers' reactions to prices. They find that when the price of one or more items falls outside of a fair price range, consumers may reject all the packages selected (Kamen & Toman, 1970). In general, previous studies have demonstrated that price influences consumer purchase intentions (e.g., Ammar & Alleil, 2019; Biswas, Bhowmick, Guha, & Grewal, 2013). It could be argued that the consumer's reaction depends on the nature of the channel. Perceived price unfairness leads consumers to react negatively and affects firms with many consequences, such

as lower purchase intentions, complaints and negative word of mouth (Campbell, 1999a; Huppertz et al., 1978; Xia et al., 2004).

For instance, a consumer might cancel all the products in a shopping cart online more than offline due to the ease in switching to another retailer's website to find better offers. Javed and Wu (2019) state that retailers face challenges in maintaining current customers who frequently switch to other online retailers. This is unlike the offline channel because it is not easy to reject all the products in the shopping cart, but consumers might have other negative reactions (e.g., advise friends not to shop from the store). Previous studies show that price increases affect consumers' shopping and repurchase intentions negatively (e.g., Campbell, 1999b; Homburg, Koschate, & Hoyer, 2005b; Homburg, Koschate, & Totzek, 2010). Therefore, this study expects that a price increase negatively affects purchase intentions in online shopping more than in a physical store for the same retailer.

Homburg et al. (2005a) call for future research to explore the conditions under which consumers are more likely to notice a price increase and what determines whether consumers will recognise the increase. It has been argued that one of the factors is the magnitude of the price increase. Consumers tend to seek a causal explanation of product price increases (Campbell, 1999a, 2007; Maxwell et al., 2013). Often consumers perceive a price increase as unfair, especially if they think the increase is due to an intent to extract higher profits (Bolton et al., 2003; Campbell, 1999a; Dutta et al., 2017; Homburg et al., 2005a; Kahneman et al., 1986b; Xia et al., 2004). Perceptions of price fairness might affect other outcomes such as consumers' future intentions to purchase a brand (Xia et al., 2004). It could be said that price formats might reduce noticing a price increase and even if an increase is noticed consumers may perceive it to be fair on the basis of a promotion stimulus which influences consumer purchase intentions.

One of the consequences of unfairness is that it leads consumers to lower intentions to repurchase (Oliver & Swan, 1989). There are several forms of reaction towards ‘unfairness,’ including complaints, switching to alternatives or even withdrawal from the market (Dickson & Kalapurakal, 1994). Campbell illustrates some negative consequences of perceptions of price unfairness, such as stopping the exchange relationship, spreading negative information, or consumers engaging in some behaviour that damages the seller/retailer. One negative consequence is consumer boycotts. Campbell also finds that consumers perceive a price increase as unfair when they infer that the firm has a negative motive (e.g., the firm is trying to use consumers to get extra profits). On the other hand, if consumers infer positive motives, perceptions of unfairness will decrease (Campbell, 1999a).

In summary, it is very important for multi-channel retailers to know the optimal price strategy to make it less likely that price differences will be noticed while simultaneously increasing purchase intentions. Therefore, this thesis combines just noticeable difference theory and prospect theory to identify the differential price thresholds for each channel and understand the impacts of different monetary and non-monetary promotions to help managers set an optimal price strategy in the online and offline channels by using different price presentation formats.

The next section will clarify the theoretical background to how noticeable price difference theory is applied in marketing practice and what causes consumers to notice price differentiation. The following table summarises the main antecedents and consequences found in previous studies regarding price differentiation.

Table 2-1: Summary of Previous Studies on Price Differentiation

Antecedent Factors/ Consequences	Findings	Studies
Differential Price Thresholds	A positive relationship between consumer perception and the magnitude of the simulated price changes using three price thresholds (5,10,15). The higher the product price, the greater the absolute price needs to be to exceed consumer price thresholds.	(Uhl & Brown, 1971)
	Consumers have different price thresholds for different products. Price thresholds depend primarily on actual prices.	(Sirvanci, 1993)
	It studied the influence of acceptable price thresholds on purchase decisions and finds that customer response to price changes is not linear. A certain magnitude of price change results in higher volume changes.	(Vastani & Monroe, 2019)
	Provide evidence of the existence of differential price thresholds and the average perception of negative and positive directions are the approximately same size of stimulus.	(Lambert, 1978)
	Females notice price differentiation more than males.	(Monroe, 1971a)
	Differential thresholds are positively correlated with the initial price. Differential thresholds under the conditions of price reductions and rises are no different at three initial prices.	(Chang & Chiou, 2007)
Framing Effects	Higher discount levels produce relatively less positive price responses in a discount store. Higher comparison price cues consistently result in positive consumer evaluations.	(Berkowitz & Walton, 1980)
	Perceived transaction dissimilarity mediates the effect of price framing on perceived price fairness, trust and repurchase intentions. A gift card is more effective than a free gift for high priced products.	(Weisstein et al., 2013)
	Mental accounting principles, price perception and reference dependence are sensitive to the ways in which deviations from reference states are framed.	(Heath et al., 1995)
	The observed price has a positive (negative) influence on perceived price gain (loss). Price influences predictive expectations of service quality.	(Pelegrín-Borondo et al., 2017)
	Perceptions of quality and monetary sacrifice exhibit different response patterns depending on time constraints, price levels and channel environment when processing information.	(Suri & Monroe, 2003)

	There is a difference in the price framing effect for high-price products. Consumers perceive a discount in dollars more than the same price reduction framed as a percentage. Consumers perceive coupon savings to be more significant than a price discount saving of the same amount. For high discounts, there will be a higher purchasing intention if the offer provides a percentage discount.	(Chen et al., 1998)
	There is a difference in the framing effect on consumer perceptions of value from 'equivalent' deals using 50% off, buy one get one free, buy two and get 50% off.	(Isabella et al., 2012; Sinha & Smith, 2000)
	The presence of a vague scarcity restriction (i.e. While stocks last) in the sales promotional offer will have a higher impact on consumers' perceived information value.	(Tan & Hwang Chua, 2004)
Reference Price Range and Price Sensitivity	Consumers have two price acceptability functions: one decreasing from left to right without a lower price threshold, and one inverted U-shaped.	(Ofir, 2004)
	Reference price effects are asymmetric, so if losses are steeper than gains then the loss situation is smaller than the gain situation. Losses looming larger than gains may be due to differences in the size of thresholds. Thresholds differ among consumers, brands and purchase occasions. Increasing frequent price promotions makes consumers more sensitive to gains and less sensitive to losses.	(Han et al., 2001)
	Reference prices are internally-driven and constantly changing.	(Coulter, 2013)
	Price ranges are shifted or shaped by the prices consumers are exposed to at the point of purchase or through their information search activities.	(Kosenko & Rahtz, 1988)
	Consumers with higher average reference prices have wider latitudes of price acceptance. Consumers with a higher frequency of purchases have narrower latitudes of price acceptance.	(Kalyanaram & Little, 1994)
	Promotions make consumers more price sensitive in the long run.	(Jedidi et al., 1999)
Channel-based Price Differentiation	A similarity of the prices for all the products in the sample: 98.92%. On average there is a minor difference between online and offline prices.	(Flores & Sun, 2014)
	Price dispersion is higher in online than offline channels when the number of pure-online retailers is sufficiently large. Retailers may have greater ability to charge different prices in online markets. The risk in multiple channels is lower than with a pure-online retailer.	(Zhuang et al., 2018)
	Pure-online retailers have the lowest posted prices and traditional retailers have the highest posted prices. Multi-channel retailers have the highest full prices. Multi-channel retailers post lower prices than traditional retailers but effectively charge higher prices when shipping costs are factored in.	(Ancarani & Shankar, 2004)
	Prices in pure-online retailers are significantly lower than prices in online multi-channel retailers by an average of \$3.27 or 14%. Price dispersion is sharply lower in pure-online retailers than in multi-channel retailers online.	(Tang & Xing, 2001)

	There is a higher extent of channel-based price differentiation for non-durables (e.g., food) than for durables (e.g., houseware). There are higher levels of price differentiation for electronics than for cosmetics.	(Wolk & Ebling, 2010)
	Channel-based price differentiation instruments increase perceived value and unfairness through perceptions of the differentiation.	(Vogel & Paul, 2015)
Channel Integration	Online-offline channel integration has positive effects on overall purchase intentions, search intentions, and willingness to purchase through the mediation of perceived service quality and risk in online channels.	(Herhausen et al., 2015)
	Consumer empowerment is positively related to consumer perceptions of channel integration, consumer satisfaction and consumer trust.	(Zhang, Ren, Wang, & He, 2018)
	Uncertainty, identity attractiveness and switching costs of omni-channel retailers partially mediate the effect of cross-channel integration on customer retention and fully mediate the relationship between cross-channel integration and interest in alternatives.	(Li, Liu, et al., 2018)
Consumer Perception	There are two kinds of differential price thresholds: perceptual and response.	(Cheng & Monroe, 2013b)
	Responses to price changes are not symmetric. Behavioural responses to a price increase are not necessarily the opposite of those to a price decrease even if the price change is identical in magnitude and from the same price level.	(Cheng & Monroe, 2013a)
	A 5% price difference is deemed rather small and a 15% price difference rather large. When the price increases, consumers perceive less price fairness for both the 5% and the 15% price difference.	(Fassnacht & Unterhuber, 2016)
	Consumer evaluations and search behaviours are influenced by characteristics of different channels and are moderated by both gender and price knowledge. Consumers in the online channel have higher price knowledge compared with those in the offline channel.	(Chandrashekar & Suri, 2012)
	Time constraints, price levels and subjects' motivations to process information lead to different perceptions of quality and monetary sacrifice.	(Suri & Monroe, 2003)
	A high dependence effect on price fairness, anger and retaliation, but no effect on writing a letter of complaint.	(Mayer & Avila, 2014)
	Price increases are perceived as significantly less fair when presented by a human than through non-human communication. When a price decreases, the price information has no impact. Consumer reactions to humans and non-humans are the same both when there is a price increase and a decrease.	(Campbell, 2007)
	The conceptual framework of price comparison is mediated by perceived price fairness, both cognitive and affective). It is moderated by transaction similarity, distributor cost and profit, responsibility, knowledge, belief, and social norms in consumer reactions.	(Xia et al., 2004)

2.3. Theoretical Background

2.3.1. Just Noticeable Difference Theory

In 1834, Ernst Heinrich Weber introduced the just noticeable difference (JND) concept, which is now also recognised as Weber's Law (Cheng & Monroe, 2013a). Weber's experiments started with detectable differences between weights. He tested two objects with different weights and found that the difference between the two objects should be above a certain amount. Weber's Law suggests that if the difference in the two weights was small no difference would be noticed (Dehaene, 2003). Weber's law is applicable to perceptions of changes in a stimulus, which means it applies to how people perceive differences between two intensities of a stimulus (Vastani & Monroe, 2019).

Weber quantified human responses to stimuli. As a result, he is considered to be the founding father of psychophysics (Cheng & Monroe, 2013a) and the father of modern experimental psychology (Woody et al., 2017). Weber's Law states "over a large dynamic range, and for many parameters, the threshold of discrimination between two stimuli increases linearly with stimulus intensity" (Dehaene, 2003, p.146). Weber's Law is represented by the equation $\Delta I/I=K$, where ΔI represents the threshold or just noticeable difference, I represents the initial stimulus value and K is a constant. The ratio of the increment threshold to the background intensity is constant (Cheng & Monroe, 2013a). Weber went further and used experiments designed to produce a better understanding of the tactile senses such as pain, touch, hearing and sight. Weber reported that the magnitude of the just noticeable difference was not a constant value but instead was proportional to the magnitude of the original stimulus (Carterette, 2012).

A German physicist, Gustav Theodor Fechner, joined Weber in his experimental studies. Fechner conducted an experiment to quantify the relationship between stimuli and

perception. In a pricing context, the differential threshold is the minimum price change needed for the just noticeable difference to be detected (Monroe, 1973). Fechner found that there is a relationship between physical stimuli and the effect on the mind. This relationship is called the 'outer psychophysics' (Fechner et al., 1966; Murray, 1990). The following will show how just noticeable difference is used in marketing research by measuring differential price thresholds.

2.3.2. Marketing Application

The concept of just noticeable difference has been applied to design marketing strategies relating to various aspects of human perception such as pricing, packaging and design. It is recognised that Weber's Law and the just noticeable difference are integral to marketing (Kamen & Toman, 1970). The main concept of Weber's Law is the necessary change in intensity needed to affect a noticeable difference in sensation (Stern & Johnson, 2010).

The majority of psychophysics studies seek to explore the relationship between physical stimuli and consumers' perceptions (Monroe, 1973; Monroe & Lee, 1999; Steenkamp, 1997). These studies are rooted in Weber's Law. For instance, an improved product design (e.g., increased size for the same price) is considered to be a positive change which consumers should notice. On the contrary, if producers need to hide negative changes, such as reducing the size or increasing the price, they need to manage consumer perceptions. The change should be below noticing thresholds and therefore less noticeable.

Monroe (1973) used the following equation to identify the just noticeable difference: $\Delta P / P_{ref} = K$, where ΔP is the differential price threshold (JND), P_{ref} is the price reference and K is a constant. ΔP was also defined by Monroe as the minimum difference in price needed to induce a perception of a price change depending on the perceiving consumer's reference price. Monroe (1971a) calculated relative frequency in order to detect stimulus value. He did so by measuring an individual's responses to different thresholds using an experimental

methodology. He selected a different range of values to establish the stimulus value. The range of the values of the stimuli rarely reduces to a point where differences are always noticed (Monroe, 1971a). Thus, by applying the just noticeable difference principle to price stimuli, Monroe identified the concept of differential price thresholds based on Weber's Law. In this context Weber's Law means that the perception of a price change or difference depends on the magnitude of the price change relative to the individual's reference price, which serves as the baseline for comparison (Cheng & Monroe, 2013a; Monroe, 1973). Thus, increasing the original price by a specific amount can reduce the noticeable price difference.

Later, Cheng and Monroe (2013a) developed an equation to show when differential price thresholds increase or decrease. They argued that it is possible to determine the just noticeable difference relative to an individual's reference price. Their equation is $K = \Delta I / \text{Pref} = \Delta D / \text{Pref} - \Delta D$, where K is the constant of proportionality, Pref is the individual's price reference, ΔI is the increase in price and ΔD is the decrease in price (Cheng & Monroe, 2013a). They measured the noticeable price difference for both price-increase and price-decrease situations. They identified the relationship between the specific magnitude of a stimulus and the amount that should be added to perceive the magnitude has changed. This is the minimum amount of stimulus intensity required to cause a change. This is recognised as the just noticeable difference (Cheng & Monroe, 2013a).

In summary, initially it was thought that the noticeable price differentiation was only based on physical stimuli, then researchers found that noticing price differentiation is influenced by other antecedent factors such as price sensitivity and the reference price range. Sirvanci (1993) empirically examined stimulus price and sensitivity by measuring price awareness. He found that response magnitude and price perception have different price thresholds for different products (Sirvanci, 1993). This thesis aims to investigate further

conditions impacting on noticing price differentiation in the context of multiple channel retailers.

Furthermore, this thesis expects that when consumers frame the current price as a gain situation, they will be less likely to notice price differentiation due to the price framing effect in prospect theory as gain and loss situations. Therefore, the next section will explain prospect theory and how it influences the consumer framing effect. This will be followed by a discussion of the antecedent factors that influence noticing price differentiation.

2.3.3. Prospect Theory

The previous literature review has shown that price presentation influences the framing effect. This means that when consumers perceive a price deal as a gain situation they will make a heuristic decision. Thaler (1985) developed the theory of mental accounting and used it as an alternative to the economic theory of consumer choice. He argued that during a transaction people perform mental accounting to decide whether different stimuli result in gain or loss. Different consumers' price perceptions are based on the framing effect. The framing effect impacts on consumer perception even if the main features of the decision-making situation are the same (Kahneman & Tversky, 1979). There are many studies of different reactions when identifying prices in sales promotions and how they affect purchase decisions (Ailawadi et al., 2009; Isabella et al., 2012; Palazón & Delgado, 2009; Serpa & Avila, 2004).

Kahneman and Tversky's (1979) prospect theory is that different price formats are perceived as positive (gains) or negative (losses) compared to a reference point (Drechsler et al., 2017). Many researchers provide plausible explanations of consumer reactions to different price frames (Palazon & Delgado-Ballester, 2009; Sheng, Parker, & Nakamoto, 2007; Sinha & Smith, 2000). Drechsler et al. (2017) investigate how different price frames affect how consumers frame the deal. In a deal with price promotion formulated in a monetary frame,

which highlights the reduction of the purchase price (e.g., X for £Y), consumers consider a reduction to be a ‘loss.’ In contrast, in a deal with price promotion formulated in a non-monetary frame, which highlights the increase in the quantity obtained (e.g., X + N free for £Y), consumers consider that they ‘gain’ from the transaction. Prospect theory predicts that the loss component has a larger impact than the gain component (Drechsler et al., 2017).

Psychological theory provides an explanation of how a heavy discount impacts on consumer perception and awareness in purchasing (Gauri et al., 2017). A high discount percentage generates additional sales and profits due to its influence on consumer awareness and the propensity to buy. In the same context, previous studies by Gotlieb and Swan (1990) and Grewal, Marmorstein, and Sharma (1996) show that the discount often enhances the deal and makes it more salient. Many studies of consumer perception have used Kahneman and Tversky's (1979) prospect theory as a theoretical background. Studies by Kahneman and Tversky (1979, 2013) show that the framing of decision-making can influence cognitive judgment. Frisch (1993) refers to the framing effect as subjects responding differently to the same decision question. In marketing research, many studies have shown this (e.g., Chen et al., 1998; Heath et al., 1995; Levin & Gaeth, 1988; Puto, 1987).

Friston (2005) states that the brain predicts sensory input rather than just accepting such stimuli. Gauri et al. (2017) explain more precisely that heavy discounts can increase consumer attention, making such discounts more salient in consumers’ minds. This is because of consumer expectation and the discounts passing the threshold of attention (Gauri et al., 2017).

Birnbaum and Stegner (1979) discuss the “judge’s point of view.” This is a configurable weight model in which consumers place greater configurable weight on lower estimates, attributes or consequences of an option than sellers do. Birnbaum (2018) recalls that a study by Thaler (1980) proposed the term ‘endowment effect’ and suggests that the phenomenon might relate to ‘loss aversion,’ but does not cite earlier configured weight theory (Birnbaum, 2018).

Current research shows that consumers' judgements of prices depend on whether the promotion is framed as a loss or a gain.

Sinha and Smith (2000) state that in prospect theory people have two values: concave and convex. Risk-averse people see a gain situation as concave and risk-seeking people see a loss situation as convex. Thaler (1985) shows that people balance between loss and gain. However, Thaler's study compares a small gain with a large loss. This is why he finds that people might segregate multiple gains and integrate loss (Sinha & Smith, 2000). It could be argued that if a price is framed as a loss because it is the regular price, which means no discount, consumers might be more concerned about the risk of loss. This might lead them to be more likely to notice price differentiation than when there is discount price promotion.

In conclusion, prospect theory explains the perception of losing or gaining value (Kahneman & Tversky, 1979). This thesis uses prospect theory to explain why consumers are more likely to notice price differentiation in a regular price format than in a promotional price presentation format. Prospect theory considers the impact of risk on a decision (e.g. Kusev et al., 2009; Trepel et al., 2005). Therefore, when consumers see a price discount, they already feel they are in a gain situation. Therefore, they might be less likely to notice price differentiation. Even if they notice the price differentiation, they will feel secure because the price discount is a gain situation. In other words, when the retailer sets the price in a gain frame it might influence the consumer to be less likely to notice price differentiation because often in gain-situation deal framing (e.g., price cut) consumers have a high intention to purchase.

In addition, monetary promotions and non-monetary promotions might be framed differently in consumer perception. To relate this phenomenon with just noticeable difference theory for multi-channel retailers, this thesis uses the important conditions of monetary and non-monetary promotion as influencers of numerical cognition, and of perceptions of the same retailer's different channels as separate or integrated.

2.4. Antecedent Factors in Noticing Price Differentiation

This section will discuss the antecedent factors that influence whether consumers notice price differentiation in the specific context of comparing the same retailer's online and offline channels. These include differential price thresholds, price presentation formats, price sensitivity, reference price range, channel integration and seasonal promotion cues.

2.4.1. Differential Price Thresholds

Differential price thresholds are price thresholds beyond which consumers might perceive the price differently. More precisely, consumers can detect price differentiation if the price reaches a certain amount (Monroe, 1973). Previous research has investigated differential price thresholds in a single channel. As previously mentioned, differential price thresholds are one of the fundamental price behaviours which have been studied in the offline context.

Psychophysics has long studied the measurement of an individual's response thresholds to physical stimuli (Monroe, 1971a). Some empirical studies have used three levels of price threshold (5%, 10% and 15%) to measure price differences (Fassnacht & Unterhuber, 2016; Uhl & Brown, 1971).

Han et al. (2001) argue that the concept of just noticeable difference suggests the existence of a zone of indifference where a small change in price may or may not be noticed (Han et al., 2001). The just noticeable difference may not have an effect on consumer choices (Wakefield & Inman, 2003). Price thresholds have been empirically and experimentally studied by some researchers such as Kalwani and Yim (1992) and Kalyanaram and Little (1994). In addition, Fechner investigates the relationship between consciously perceived intensity changes and threshold stimuli. He studies the extent to which a price can be increased before the consumer notices any difference (Fechner, 1860). However, there is a dearth of studies comparing differential price thresholds between online and offline channels.

Although consumers perceive online prices to be lower than offline prices, there is a need to investigate noticeable price differences in multi-channel retailers, i.e., whether consumers notice price differentiation for one product more in the same retailer's online store than in the offline store or whether price differentiation will be noticed the same.

It could be argued that differential price thresholds online and offline might differ because of the nature of each channel. This thesis expects that differential price thresholds lead consumers to notice price differentiation at a particular threshold. Comparing online and offline prices, consumers notice price changes equally at some price thresholds and at higher thresholds their noticing price differentiation between the online and offline channels differs.

2.4.2. Reference Price Range and Price Sensitivity

Reference Price Range

The reference price is the price that stored in the consumer's mind as a result of experience. Empirical studies support the existence of the reference price (Emery, 1970; Kalwani et al., 1990; Krishnamurthi et al., 1992; Putler, 1992; Winer, 1986). Many theories suggest the existence of reference prices (Rajendran, 2009) such as adaptation-level theory (Helson, 1964), prospect theory (Kahneman & Tversky, 1979), mental accounting (Thaler, 1985), and price-tier theory (Blattberg & Wisniewski, 1989). Many studies have investigated the role of reference prices (see Biswas & Blair, 1991; Lichtenstein & Bearden, 1989; Putler, 1992; Urbany & Dickson, 1991). For instance, Monroe states that adaption-level theory assumes that price is not judged in isolation but comparatively based on a reference price or range (Monroe, 1990). There is agreement among empirical studies that the reference price moderates consumer responses to price (e.g., Kalyanaram & Winer, 1995; Rajendran, 2009).

Consumers perceive a change in price when they know the actual price paid for their previous purchase or a reference price (Adaval & Monroe, 2002). It becomes difficult to know

exact prices because individuals deal with hundreds of numbers every day. The variety of goods and products in stores also makes it more difficult for consumers to recall the prices paid in previous shopping. Hence, consumers evaluate current product prices by relying on reference prices, which are the prices that consumers assume from their previous experiences (Emery, 1970; Kalwani et al., 1990; Kalyanaram & Little, 1994; Krishnamurthi et al., 1992; Putler, 1992; Winer, 1986). Some studies find that consumers evaluate the current price against previous purchase prices. Monroe & Lee (1999) report that there is difficulty in recalling the actual price paid. They propose that consumers use episodic memory, which is conceptually driven implicit memory. They measure price awareness using a reference price, which is the price paid for the last purchase. Their argument is that consumers often make purchase decisions based on what they know rather than what they remember.

Dickson and Sawyer (1990) examine the point of purchase from the perspective of shoppers' behaviour. They empirically study consumer behaviour regarding price checking, price remembering and level of awareness. They apply the technique of asking shoppers about prices immediately after the shoppers select an item. Their main finding is that fewer than 50% of shoppers remembered the price, while the rest selected the item because it was reduced in price. They find that shoppers tend to spend a short time selecting the product and half their participants did not check the price. Kenning, Hartleb, and Schneider (2011) suggest that there is a need to understand in depth the concept of price knowledge and the methods applied to measure price knowledge. It could be that half the shoppers only remembered the price because the data was collected immediately after the shoppers had selected the items. However, shoppers may not remember the price after a while.

The acceptable price range can indicate the variation in consumers' true choice probability (Dost & Geiger, 2017; Dost & Wilken, 2012; Schlereth et al., 2012). Consumers have a different range of prices that they are willing to pay to buy a product. For instance, they

might be willing to pay between £15 and £35 for a pair of jeans. The width of the range indicates that consumers have uncertainty about preferences and product performance. Researchers argue that the average of the prices in the range is a measure of consumers' latent true willingness to pay (Dost & Geiger, 2017; Maier et al., 2015).

Vastani and Monroe (2019) claim that there are upper and a lower acceptable price limits or thresholds at the time of considering a purchase. The lower price threshold is a price greater than zero below which would be unacceptable. The upper price threshold is the maximum price above which the consumer would refuse to or be unable to pay for the product. However, these thresholds differ from consumer to consumer. The width of the acceptable price range differs according to the consumer's limits and the product category (Vastani & Monroe, 2019).

A number of researchers have found that recognised brands have a narrower latitude of price acceptance (Lichtenstein et al., 1988) because the prices of recognised brands are often known. Furthermore, Kalyanaram and Little (1994) argue that consumers who have a better knowledge of brand prices are more likely to notice price differentiation because they know the actual price. Hence, their acceptable price range will be narrow (Kalyanaram & Little, 1994).

Studies, such as Kalyanaram and Little (1994), Mazumdar and Monroe (1990), Monroe (1971a) and Sawyer and Dickson (1984) confirm that consumers have an acceptable price range or reference price range within which they are willing to make a monetary sacrifice to obtain products. The reference price range gives consumers the ability to encode a price as 'cheap' or 'expensive' because it is not easy to remember all prices (Cheng & Monroe, 2013a; Monroe, 1971a; Zeithaml et al., 1985). If the current price is within the acceptable range it leads to unnoticed differentiation, if any. As Monroe (1971a) shows, each buyer has an acceptable price range and will evaluate prices depending on that range. He argues that consumers pay greater attention to the high and low values in the price range.

Sherif and Hovland (1953) develop a measure of individual responses to gauge subjective stimuli. They asked participants to classify a variety of items into categories such as most acceptable and unacceptable. They were able to determine the most acceptable and unacceptable individual items within ranges.

Empirical studies show that there are differential price thresholds within the acceptable price range which have a significant impact on the purchasing decision (Fouilhé, 1960; Andre Gabor & Granger, 1966; Monroe, 1971a; Sherif, 1963). Other studies confirm that consumers have an acceptable price range (Monroe, 1971a; Zeithaml et al., 1985) within which they do not perceive a price difference. Consumers pay more attention to the upper and lower levels of the price range but neglect price changes inside the range (Zeithaml et al., 1985). Hence, if the stimulus is far from the reference level – i.e., outside the range – it will have an effect on consumer behaviour (Wakefield & Inman, 2003).

Therefore, to be able to recognise any change in a price, consumers must have a base price point. One of these points is the reference price range. Some studies find price sensitivity when consumers notice the difference between the current price and the reference price, as it affects their choice (Han et al., 2001). It can be argued that knowing prices is essential for consumers to be able to compare alternatives or observe any change in price. They may know the price by knowing the reference price range. Consumers may rely on a reference price range as a tool to be able to compare different prices, which also leads to noticing any change in price in different channels. It could be argued that when comparing online and offline channels, the reference price range in the offline channel is wider than in the online channel.

Many papers show the importance of the reference price point or range in judging price and noticing price differentiation. As mentioned, the reference price range reflects the consumer's acceptable price range. Therefore, this thesis expects that the reference price range will play a significant role in noticing price differentiation between online and offline channels

for the same retailer. More precisely, the distance between the highest and lowest price in the reference price range may differ in different channels, which impacts on noticing price differentiation in different channels for the same retailer.

Price Sensitivity

Price sensitivity refers to how much consumers perceive and react to various price levels (Abdullah-Al-Mamun & Robel, 2014). Many studies find that price sensitivity has a strong relationship with noticeable price difference (Dickson & Sawyer, 1990; Wilkinson et al., 1982). Price sensitivity has been explained as the consumer's level of focusing on paying a lower price (Lichtenstein et al., 1993). When price sensitivity is low, consumers will not react when a price changes (Goldsmith & Newell, 1997). Monroe (1973) states that price sensitivity refers to the extent to which individuals respond to changes or differences in prices.

Price sensitivity is an equivalent concept to price consciousness but it always involves searching for a lower priced product (Munnukka, 2008). It is the degree to which consumers are focused on paying low prices (Lichtenstein et al., 1993). It is considered one of the basic elements in online shopping (Yaraş et al., 2017). Price consciousness differs from consumer to consumer (Lichtenstein et al., 1988). Consumers who are less price conscious search prices less and consider discounts to indicate a significant reduction in price (Palazon & Delgado-Ballester, 2009; Sinha & Batra, 1999). Brown (1968) argues that shopping behaviour might be a better indicator of perceptions of price differences than conscious concern about price. In his study he investigates the market price of a basket of 80 items in different supermarkets in different cities (Monroe, 1973).

Goldsmith and Newell (1997) show that there will be less demand from consumers who have high price sensitivity when the price goes up and more when the price goes down. On the

other hand, consumers with low price sensitivity react less to price changes (Wakefield & Inman, 2003).

Price dispersion makes consumers more sensitive to price (Kopalle et al., 2009; Kübler et al., 2018; Kung et al., 2002). It occurs more often in online than offline stores. It could be argued that price sensitivity differs between shopping online and offline and this will influence noticing price differentiation differently. Price sensitivity influences noticing price differentiation more offline than online.

2.4.3. Price Presentation Formats

The price presentation format means the price that appears to consumers at the point of purchase. The price format depends on the retailer's strategy when setting the price. Strategies include a regular price (e.g., £10), an external reference price (was £/now £), the end digit (e.g., £9.99 or £10.00) and other formats (e.g., Bell & Lattin, 1998; Huber, Gatzert, & Schmeiser, 2015; Kopalle et al., 2009). Current research studies price presentation formats from the consumer's side and not from the retailer's side to understand their effect on consumers' price behaviour. They show possible pricing strategies and how these formats influence consumers noticing price differentiation.

Retailers with multiple channels face difficulty in pricing (e.g. Chioveanu & Zhou, 2013), and more precisely in local markets (Porter, 2000). Retailers have many products in each store and have to balance the prices in all their branches and different channels. Prices can often vary in different locations due to variations in demand, competition, seasonality and operating costs (Grewal & Levy, 2007). Prior studies have provided many insights into a host of pricing issues such as the role of external and internal reference prices, the role of temporary price reductions, the effectiveness of price promotions and price presentation cues. They have investigated whether consumers recognise small changes in prices and whether they care, and

how retailers maximise profits through optimal pricing and with conflicting goals to consider. These areas warrant additional research. However, retailers can apply a differential pricing policy in different regions and channels because consumers can buy on the internet or in physical stores (Grewal & Levy, 2007).

Promotions give a cue of a price discount to add value to the deal. This provides temporary monetary incentives to consumers who purchase reduced price products at a particular time (Blattberg et al., 1995; Chandon et al., 2000). Sheehan et al. (2019) argue that the magnitude of price discount incentives (Blattberg & Neslin, 1990; Erdem & Keane, 1996; Laroche et al., 2001; Mela et al., 1997) can reflect the additional value of the deal. The attractiveness of the discount depends on the effect of its magnitude (Kahneman & Tversky, 1979) on consumer perceptions (Sheehan et al., 2019).

A price promotion can affect consumer perceptions of a product's price in the long term through the price that consumers expect to see (Kalwani & Yim, 1992) and what they believe is a good price. This leads to a lower reference price when they compare the promotion price with products that are not promoted (Raghubir et al., 2004). There are two types of reference price (Carlson & Compeau, 2018). As mentioned previously, the internal reference price is a price in the consumer's mind. An external reference price is a price provided by a seller in a promotion as a price offer (e.g., regular price £100, sale price £70). Some studies suggest that when the external reference price is higher than the internal reference price but within the acceptable price range, the external reference price is used to update the internal reference price (Grewal et al., 1998; Kan et al., 2014; Zeithaml, 1988). It could be argued that if a retailer sets a price promotion with an external reference price higher than the acceptable price range, consumers are less likely to notice price differentiation.

In terms of monetary promotions, many studies compare the effectiveness of the buy-one-get-one-free (BOGOF) format and price discounts (i.e., 50% off) in sales promotions (Yang

& Mattila, 2020) in terms of perceived transaction value (Lowe, 2010; Sinha & Smith, 2000), promotion preference (Li, Sun, & Wang, 2007), promotion price attractiveness (Spiegel et al., 2011), consumer attitudes (Osman et al., 2011) and purchase intentions (Lowe & Barnes, 2012).

Increasing prices dramatically can be harmful to retailers. Retailers seek to increase profits by increasing prices and this can lead to an increase in the level of risk. Prospect theory holds that in a price change the effect of losses is larger than that of gains. Hence, the discount of a promotional price might frame the consumer to perceive the deal as a gain situation so the effect of price differentiation will be smaller than in a loss situation regarding the regular price.

Researchers find that monetary and non-monetary promotions play the main role in the success of marketing plans (Banerjee, 2009; Palazon & Delgado-Ballester, 2009; Raghurir, 2005; Suri et al., 2000). This explains why companies reduce the ratio of advertising to sales promotion. Nowadays, companies tend to spend about 75% of their promotion budgets on sales promotions (Bogomolova et al., 2015). Monetary promotions often reduce the price of a product for a temporary time (e.g., Banerjee, 2009; Palazon & Delgado-Ballester, 2009; Raghurir, 2005; Suri et al., 2000). The next sub-section will show how non-monetary promotion as seasonal promotion influences the consumer framing effect.

2.4.4. Seasonal Promotions

Seasonal promotions include special offers, discounts and limited-edition items related to many occasions during the year (e.g., Johnston, Stafford, Pierce, & Daube, 2017; Thompson, Gooner, & Kim, 2015; Yeshin, 2006). These occasions can be specific festivals such as Valentine's day or a certain time of year (e.g., summer or the back-to-school season). The seasonal sign is a semantic signal that there are discounts on prices. Seasonal signs attract consumers to purchase at lower prices. Recently, the numbers of seasonal occasions for price discounts during the year has increased. It is notable that many retailers provide discounts on every seasonal occasion

and sometimes keep the promotional price for a longer period because the sales increase revenue and retailers always want more and more revenue.

Comparisons between non-monetary promotions, for instance buy one get one free or an extra free product, and an equal amount of discount (50%) have been well-studied (e.g., Li, Sun, & Wang, 2007; Shen, 2014; Tripathi & Pandey, 2017). According to prospect theory, in non-monetary promotions more gain is perceived than in monetary promotions. Researchers have demonstrated the importance of non-monetary promotion in consumer perceptions of deals. Retailers also use non-monetary promotion formats (i.e., buy one get one free or coupons). For example, Sinha & Smith (2000) find consumers are more likely to prefer price discounts for expensive products and bonus packs for inexpensive products.

Recent research shows that non-monetary promotions (e.g., gifts, bonuses, chances to win contests and sweepstakes) increase the benefits from purchasing promoted products (Sinha & Verma, 2020). In the same vein, many researchers suggest that non-monetary promotions are considered more favourable compared to monetary promotions because they do not have any harmful effect on long-run perspectives (e.g., brand value). Indeed, non-monetary promotions enhance long-term brand-building (Mela et al., 1997; Yi & Yoo, 2011) and have a positive impact on perceived quality (Buil et al., 2013).

Cheema and Patrick (2008) examine the effect of positive and negative frames (i.e., 'anytime' and 'only') on consumers' perspectives when evaluating an offer (Cheema & Patrick, 2008). It has been found that there are differences between positive and negative frames, with most consumers preferring positive frames (Tversky & Kahneman, 1981). Cheema and Patrick (2008) suggest that expansive and restrictive frames differ in the extent to which consumers pay attention to the probability of benefit from the deal depending on their mindsets. They suggest that their research might be equally applicable to other marketing communication cues

(Cheema & Patrick, 2008). Therefore, non-monetary promotions can be positive or negative depending on how consumers frame the deal.

In terms of performance risk, consumers are more likely to prefer non-monetary promotions than monetary promotions (Lowe, 2010). Consumers who are prone to respond to non-monetary promotions (e.g., gifts) get benefits such as value expression and exploration (Sinha & Verma, 2020).

Non-monetary promotion studies have focused on how different formats influence consumers to frame deals differently. However, few studies investigate time-limited or seasonal promotions. Time-limited promotions encourage consumers to purchase quickly (see Inman, Peter, & Raghurir, 1997; Tan & Hwang Chua, 2004). Discounts with a certain duration are more effective than flash deals or daily deals which have heavily discounted rates for a limited number of hours (Mattila & Gao, 2016; Parsons, Ballantine, Ali, & Grey, 2014; Piccoli & Dev, 2012). Some researchers use the term ‘temporary discounts’ (e.g., Carlson, Bearden, & Hardesty, 2007; John, 1999; Wright, Friestad, & Boush, 2005).

Retailers tend to use semantic cues to give meaning to a deal. Some evidence suggests that semantic cues may play an important role in consumers’ responses (Carlson & Compeau, 2018; Grewal et al., 1996; Krishnan, Biswas, & Netemeyer, 2006). This thesis will use the term ‘Black Friday’ to refer to time-limited promotions. Following prospect theory, the thesis will consider that non-monetary promotions (seasonal and non-seasonal) may influence the framing effect.

A recent study has investigated retail format and message content. It uses message content price promotion with a seasonal cue to measure sales and the attractiveness of a deal (Roggeveen et al., 2016). It could be argued that the research did not investigate sufficiently deeply the effects of promotion with and without a seasonal cue on price perceptions. According

to the loss and gain situations in prospect theory, seasonal and non-seasonal promotions might influence the framing effect differently. Knowledge on the effects of seasonal and non-seasonal promotions on noticing price differentiation is still scarce.

2.4.5. High vs. Low Channel Integration

Channel integration refers to ways to coordinate multiple channels, such as through retail forms, the media, fulfilment mode, websites and physical stores. Retailers tend to use channel integration to take advantage of each channel to avoid cannibalization and create synergy, and hence maximise firm performance (Neslin et al., 2006). Integration of channels offers a seamless shopping experience to consumers (Zhang et al., 2018) across channels. Previously, retailers on the internet were considered retailers who sell products or provide services online but modern business model strategies use online platforms as part of multi-channel strategies (Yaraş et al., 2017).

According to Herhausen et al. (2015, p. 310), “channel integration is defined as the degree to which different channels interact with each other.” According to Frazer and Stiehler (2014, p. 655), “a true omni-channel experience would mean that one transaction can span over more than one channel.” Channel integration plays a significant role in influencing, for instance, transaction value (e.g., Chatterjee, 2007; Verhoef et al., 2015) and sales growth (e.g. Akturk et al., 2018; Cao & Li, 2015) and reduces consumer risk (e.g. Akturk et al., 2018; Herhausen et al., 2015; Zhuang et al., 2018). Thus, many multi-channel retailers are motivated to increase their service quality through integration across their channels to gain competitive advantages. This motivates the current study to investigate the role of channel integration in noticing price differentiation.

Many retailers have tried to integrate their services across channels in order to meet consumer expectations of consistency. When retailers integrate their channels, they can serve

all their customers regardless of when and where they want to make a purchase (Zhang et al., 2018). Retailers take advantage of digitalization and changing consumer expectations in new business models which require managers to understand and react to the changes in the retail landscape at a fast pace (Hänninen et al., 2017). One recent change in business models is channel integration.

Rapid technological development and the continual emergence of new channels have given consumers more information and choices than ever before to engage with retailers across multiple touch-points (Cao & Li, 2018). The fact that the buying process begins before the actual buying and continues longer afterwards is known as the customer value-adding journey (Wilding, 2003). There are four main fundamental stages in the customer value-adding journey: pre-purchase, payment, delivery and return (Frambach et al., 2007; Lamb et al., 2015; Saghiri et al., 2017).

Often before buying a product, customers will collect information about it (e.g., features, size, price and nearby stores to buy it). The payment stage can add value in terms of convenience, security, speed and flexibility, especially if the purchase is online. The customer's value-adding journey continues in the delivery stage, where nowadays many retailers provide a variety of options to deliver the products. The value-adding journey continues for consumers who want to return the product. Different ways to return the product may have different levels of value for the customer (e.g., free online returns and the speed of refunding to the consumer's bank account) (Saghiri et al., 2017). In all these stages, retailers have the opportunity to provide better service and omni-channel retailers focus more on these stages to add value to customers by providing all the stages equally in online and offline channels.

2.5. Chapter Summary

Chapter Two has had three main sections: on previous research in price differentiation, on the theoretical background of the present study and the antecedents of noticing price differentiation. The first section gave a clear definition of price differentiation, how consumers respond to prices in general, and the consumer perceptions and consequences of noticing price differentiation. Retailers use many strategies to maximise profits, including increasing prices. However, prices are limited by competition. Therefore, one pricing strategy is to use different prices in online and offline channels, which might make price differentiation less noticeable to consumers.

Retailers often seek to increase their profits and revenue. Some retailers use price discounts to keep current customers or raise prices while providing lower-priced opportunities for consumers who actively seek them out (Ferguson, 2014). For example, during a promotion at a fashion store you find that selected items have a discount and the other products have a regular price or a higher price than the regular price (e.g., new collections). Hence, promotions increase perceptions of price value and a quality relationship with the retailer.

In addition, consumers can more easily compare online price than offline prices, so they are able to notice price differentiation in the moment they search prices. Consumers may fail to recognise price differentiation between online and offline channels for the same retailer. Moreover, noticing price differentiation in two different periods of time is much more difficult, especially for low involvement and less risk purchase decisions, such as on grocery goods, beauty products and cigarettes. Hence, it is important to understand the consequences of consumers noticing price differentiation in multi-channel retailers, how they react and the extent of their price perception in a multiple-channel system.

When retailers provide promotions and repeat them later with a different amount of discount, if consumers see that the same original price is kept but the discount is lower, they might perceive it as a deceptive practice leading to unfairness. Another perception of unfairness might occur when retailers increase the original price through a price promotion. In other words, at the end of the promotion they set the price back to the original price or increase it above the original price. Thus, consumer perceptions impact on consumer purchase intentions. Three consumer perceptions – of value fairness, a quality relationship and promotional price attractiveness – are important regarding purchase intentions when consumers notice price differentiation.

The second section described the theoretical background of how just noticeable difference theory and prospect theory are applied in marketing, and more precisely to consumer perceptions of prices. Knowing prices is essential for consumers to be able to compare alternatives or observe any change in price. They can know the price by knowing the reference price point. Price knowledge is very important in pricing strategy. When managers have knowledge about the extent consumers are willing to pay for a specific product, they are able to set a clear pricing strategy (Anderson et al., 1992; Dost & Geiger, 2017; Homburg et al., 2005b).

The literature review also showed that previous studies have neglected to study the just noticeable difference in multi-channel retailer pricing. Previous studies have determined that consumers notice price differentiation at price thresholds of 5% (see Fassnacht & Unterhuber, 2016; Uhl & Brown, 1971). This thesis argues that there is no research yet in the context of multi-channel retailers investigating the extent consumers notice price differences in online and offline channels for the same retailer. Therefore, this study seeks to investigate differential price thresholds comparing online and offline channels and in which channel consumers are more likely to notice price differentiation.

Consumers believe that online stores usually have lower prices than physical stores due to the different costs and operating expenses of each channel. This leads them to be more sensitive to online prices than offline prices. However, no research has yet studied differences between price sensitivity in online and offline channels for the same retailer.

Psychophysics studies suggest that people cannot distinguish between alternative products unless the options are sufficiently different. This thesis argues that alternatives and ways of presenting products in online and offline channels are different. Therefore, price presentation formats in the online and offline channels of multi-channel retailers are perceived differently. Different price presentation formats lead to differences in noticing price differentiation between regular prices and promotional prices in different channels for the same retailer. More interestingly, consumers might notice price differentiation in different monetary promotions (e.g., save £, now £ and was £/now £ as an extremal reference price) as prospect theory explains. This research contributes by integrating just noticeable difference theory with prospect theory.

The third sections provide antecedents factors of noticing price differentiation in multiple channels system that include differential price threshold, individual differences of price perceptions, price presentations formats, seasonal cues, and channel integration. The differential price thresholds can be differed in different channels and the promotions price versus regular price can be differ as well. The literature review illustrate that the seasonal cue might influence noticing price differentiation.

Chapter Three: Research Framework and Hypotheses

3.1. Introduction

This study aims to determine the price thresholds at which it is most likely there will be a noticeable difference in price between online and offline channels for the same retailer, and the price formats that make differentiation less noticeable. The thesis has two main research questions. The first question regards differential price thresholds in multi-channel retailers online and offline and in which channel that customers are more likely to notice price differentiation. The second question concerns the stimuli that make noticing price differentiation more/less likely.

The literature on different channel platforms, which gives a better understanding of practice in multiple channels, has focused on two main research themes: physical stores and virtual stores (online and offline channels). Each of these themes contains a variety of channels as retailers use different approaches to compete with rivals. Chiu et al. (2016) argue that retailers use multiple channels – such as physical stores, virtual stores, stalls, catalogues and mobile applications – in order to improve competitiveness. As an example of multiple channels, Tesco has offline channels such as local, express and extra stores, while the online channels include an online website and an app. Both the ‘online’ and ‘offline’ channels are very important to consumers and retailers.

Although some consumers may prefer to use a single channel to perform all shopping activities, more and more consumers use different channels in different shopping stages. For instance, consumers may search online for product information and prices and purchase the product offline, or try the product offline and purchase online (Chiou et al., 2017). Hence, consumers clearly appreciate and take advantage of both online and offline channels. Many shoppers visit both the online and offline channels to combine the convenience advantages of online shopping with the self-service advantages of offline stores (Alba et al., 1997; Chu et al.,

2008; Konaş, Verhoef, & Neslin, 2008; Venkatesan, Kumar, & Ravishanker, 2007). Although multi-channel shoppers visit both channels, they may have different behaviours in the online and offline channels regarding buying certain categories of goods (Campo & Breugelmans, 2015).

Retailers tend to change prices (see Paparas, Pickering, Tremma, & Aguiar, 2018) when facing an economic crisis such as 'Brexit,' the current UK economic crisis, in which food prices have increased (De Lyon et al., 2017). Some studies find that imported goods will increase in price after Brexit (e.g., Gudgin, Coutts, Gibson, & Buchanan, 2018). Some retailers have already increased some of their prices and meanwhile provide promotions for other products. However, the price increases are often not very noticeable. For example, a breadstick was £0.75 but recently became £0.84, an increase of more than 10%. In addition, sometimes the price in a first promotion is better than in a second promotion. Retailers repeat time series of promotions (Elberg et al., 2019). When the promotions end, they raise the price back to the original price (Tsiros & Hardesty, 2010). Sometimes when promotions end, retailers might increase the original price. The phenomena of price increases and price differentiation in the after-sales period have existed in many service industries such as hotel services and other industries with low involvement such as fast fashion products.

Garrigós-Simón, Palacios-Marqués, and Narangajavana, (2008) mentioned that the new business environment is characterised by complexity, changes, and unpredictability. Therefore, one of the most effective ways to deal with such situations is to set and manage pricing strategies (e.g., Choi & Mattila, 2009; Narangajavana, Garrigos-Simon, García, & Forgas-Coll, 2014). Some researchers state that understanding the factors which affect consumer behaviour and the decision-making process is important for firms and researchers who seek to find the key ways for retailers to maximise their profits (e.g., Ailawadi et al., 2009; Isabella et al., 2012).

Melis et al. (2016) state that grocery stores are one of the most important markets in which there is less change in shopping patterns across channels compared with other sectors. They find other sectors that cannot be transferred to the fast-moving consumer goods (FMCG) sector, where channels are used interchangeably rather than sequentially, for example when consumers search online but then purchase offline (Melis et al., 2016). It can be argued that if consumers shift to the online store, they will maintain their purchase behaviour online because they trust the retailers of products that they dealt with before. Hence, if the price online is different to that in the offline store, the consumer might be less likely to notice price differentiation across channels.

3.2. Differential Price Thresholds

Differential price threshold studies have focused on single channel (e.g., Cheng & Monroe, 2013b, 2013a; Sirvanci, 1993) and most studies identify the low level of differential price thresholds is 5%. However, there is a need to investigate the high level of differential price thresholds comparing between online and offline channels to understand how consumers notice price differentiation between online and offline channels for the same retailer. The existing literature shows that there are several strategies to set prices in multiple channels. Kuo et al. (2016) state that there are three degrees of price setting. According to Samuelson and Marks (2008), first-degree price discrimination encompasses monopolistic pricing to sell at each individual customer's maximum price. Second-degree price discrimination deals with quantity discounts. Third-degree price discrimination is when a company charges different prices to different customer segments.

Wolk and Ebling (2010) state that retailers can apply the strategy of channel-based price differentiation by setting different prices for the same product in online and offline channels, so customers will select the channel that they prefer (Wolk & Ebling, 2010). Channel-based price differentiation is described by Fassnacht and Unterhuber as a form of second-degree price

discrimination (Cuellar & Brunamonti, 2014; Fassnacht & Unterhuber, 2016). Channel-based price differentiation appears to be acceptable because differences in prices in online and offline channels can be easily justified by differences in channel characteristics. Consumers use different channels to get the various benefits of the channels (Chu et al., 2007) and evaluate channels differently (Wolk & Ebling, 2010). Evidence suggests that customers evaluate online channels differently to offline channels (Jensen et al., 2003; Kacen et al., 2013; Vogel & Paul, 2015; Wolk & Ebling, 2010).

The just noticeable difference theory is important to perceive the price differentiation. Where the ability to notice differentiation is learned. Customers who shop frequently are better at noticing price differences because they learn to discriminate between stimuli (Assael, 1995). Some frequent shoppers focus on stimuli within their range of exposure (Solomon, 2010). These customers might focus more on the price details of the products they need. Hence, they might be able to notice a change between stimuli. If consumers cannot remember prices across channels, then it may result in a reduced intensity of price changes. In turn, this influences the noticeable price difference between channels for the same retailer. In addition, the noticeable difference is subject to the fact that the change in price will become recognisable if the stimulus value reaches a certain threshold.

Consumers can compare prices in online channels more easily than in offline channels because they can access a variety of online stores. When consumers have all prices online, they are able to recognise different prices, sizes and quantities. In contrast, comparing prices in physical stores is more difficult because consumers cannot compare, recognise and recall all actual prices even when using technology such as barcode scanners. This thesis expects that when consumers compare prices of different time periods there will be a reverse effect of noticing price differentiation online and offline. For instance, when consumers see a product price or purchase it and after a period of time when they see again that product to evaluate it

from the previous experience. In two periods of time consumers might notice price differentiation in offline channels more than in online channels for the same retailer. The online prices although can easily be compared but it difficult to notice price differentiation compares with offline channel due to the nature of each channel in terms of how the products are viewed that more products being presented in the online channel than in the offline channel.

Studies show that when consumers deal with channel-based price differentiation, a retailer may offer regular prices in a reference channel (i.e., traditional store) and the same retailer may provide lower prices in other channels (i.e., online store) (Vogel & Paul, 2015; Wolk & Ebling, 2010). Researchers suggest that when retailers apply channel-based price differentiation they should set the average level of overall price differentiation between channels lower than if an equal price were set online and offline (Alba, Broniarczyk, Shimp, & Urbany, 1994; Alba, Mela, Shimp, & Urbany, 1999; Vogel & Paul, 2015). In other words, managers should pay attention to pricing strategy when using channel-based price differentiation so that the average increased price in different channels is lower than the increased price when applying the same price in all channels. Hence, knowing the optimal price-setting strategy is important to retailers. They need to know whether to increase or decrease prices by understanding differential price thresholds and other stimuli affecting noticing price differentiation.

Grewal et al. (2017) argue that the location of the sale price in displays and communications on online platforms can have a considerable impact. Recent research by Poncin and Mimoun (2014) suggests that the new forms of technology-based reality enhance sensory perceptions. It can be seen clearly that online channels differ from offline channels in terms of visual presentation, which might lead to different perceptions. Vogel and Paul (2015) use channel-based price differentiation instruments as second-degree price discrimination. Similarly, the current research uses the same concept of second-degree price discrimination to

set price levels based on channel differentiation. It will investigate in depth the effect of the price stimulus in noticing price differentiation in each channel and how consumers perceive the price in different channels. For instance, a consumer might evaluate the exact price for the same product significantly differently in the different channels for the same retailer. Based on this, the thesis puts forward the following hypothesis:

H1: Consumers are more likely to notice a price difference offline than online for the same retailer when the price changes.

3.3. Reference Price Range and Price Sensitivity

This subsection includes two factors which are reference price range and price sensitivity. A number of researchers argue that the value of K in the original Weber's Law equation $\Delta I/I=K$ may vary across different products (Dehaene & Marques, 2002; Monroe, 1973). In this context, Cheng and Monroe (2013a) find that sensitivity to prices is not only influenced by consumers but also depends on the product and market. This finding may explain why consumers are more sensitive to the same percentage of price change for some products than others. Cheng and Monroe give the example that some products have a higher K value than others.

In addition, researchers argue that the relationship between the change in the product price and the reference price in the mind of consumers is a constant for any noticeable price difference (Coulter, 2013; Gabor & Granger, 1979; Monroe, 1971a). Some researchers in the numerical cognition field have demonstrated that numerical magnitude comparisons typically follow Weber's Law. They argue that there is a negative relationship between the noticeable price difference and magnitude. When the difference between two numbers decreases, the magnitude of these numbers increases (Algom et al., 1996; Coulter, 2013; Dehaene et al., 1990; Grewal & Marmorstein, 1994).

Hence, it can be argued that noticeable price difference depends on the reference price and price sensitivity as individual differences of price perception built around the product and market. As Cheng and Monroe (2013a) explain, differential price threshold percentages vary across products. Therefore, as just noticeable difference is linked to price thresholds, consumer reactions to changes in the current price in relation to individuals' reference prices depend on the type of product. Therefore, sensitivity to prices is not related to the absolute difference but the relative change (Cheng & Monroe, 2013a). The substantial idea in Weber's law is that the change in stimulus intensity which is necessary to detect a change is a constant proportion of the original stimulus rather than a constant amount. For instance, if a change of 2 pounds is needed to detect a change in a 10-pound weight then a change of 4 pounds is needed to detect a change in a 20-pound weight (Brannon, 2006)

Reference Price Range

Many researchers have investigated the reference price and examined it considering asymmetric or different price response effects (Emery, 1970; Hardie et al., 1993; Kalwani et al., 1990; Krishnamurthi et al., 1992; Lattin & Bucklin, 1989; Mayhew & Winer, 1992; Putler, 1992; Raman & Bass, 2002; Winer, 1986). Researchers in the area of behavioural prices have confirmed that consumers have an acceptable price range in their purchase decisions. The acceptable price range is bounded by upper and lower absolute price thresholds. However, if the price exceeds the upper and lower price thresholds, consumers will not decide to purchase the product or service (Cheng & Monroe, 2013a; Monroe, 1971a; Vastani & Monroe, 2019).

Researchers have shown that asymmetric or different price responses affect various responses to prices above and below the reference price. Prices above the reference price are perceived as losses and prices below the reference price are perceived as gains (Hardie et al., 1993; Kalwani et al., 1990; Kalyanaram & Little, 1994; Mayhew & Winer, 1992; Putler, 1992). This may lead to a negative or positive response depending on whether the current price is

below or above the reference price. It can be said that consumers rely on the reference price as a concept to enable them to compare different prices, which might influence noticing any change in price online or offline for the same retailer.

In an early study, Monroe (1973) stated that various researchers have suggested that one factor determining price perception is the last price paid. In the same context, Uhl and Brown (1971) reported that respondents failed to identify the last price paid to judge a price change because there is not a strong relationship between consumers' abilities to perceive price change and to identify them. Monroe argued that there is a lack of awareness of prices when consumers compare and judge prices. He suggested that a reference price and other strategies are used to judge the present price (Monroe, 1973). Researchers argue that the relationship between a change in product price and the reference price in the minds of consumers is a constant for any change in price thresholds (Coulter, 2013; André Gabor & Granger, 1979; Monroe, 1971a).

The concept of acceptance price latitude, or the acceptable price range, emerged at the beginning of the 1970s. Emery (1970) stated that the amount of price variation is not affected by sales. Later researchers identified upper and lower price thresholds of the acceptable price range (Mazumdar & Jun, 1992; Monroe, 1971a). Kalyanaram and Little (1994) reported that price thresholds are driven by consumer demand. The concept of the acceptable price range is based on consumers' subjective perceptions of price. As Monroe (1971a, 1971) argued, consumers use price as an indicator of the product's attributes of cost and quality. In this context, researchers assume that when a price is above the upper limit then consumers may perceive the product as too expensive, but when the price is below the lower limit, consumers perceive that the product is of poor quality (Monroe, 1971b; Sherif, 1963).

Ziethaml (1982) suggests that consumers encode actual prices in ways that are meaningful to them. In the same context, researchers propose that consumers establish an acceptable price range or latitude for a particular product category in order to judge if the actual

price is high, low or fair (Chiang & Dholakia, 2003; Monroe, 1973, 1990). This acceptable price range is termed the reference price (Kalyanaram & Little, 1994). Often consumers set price thresholds by recalling actual prices or a reference price (Sirvanci, 1993). Consumers may evaluate current product prices by relying on the reference price, which is the price that consumers assume from their previous experiences (Emery, 1970; Kalwani et al., 1990; Kalyanaram & Little, 1994; Krishnamurthi et al., 1992; Putler, 1992; Winer, 1986).

Previous studies have also provided evidence of the internal reference point on a psychological scale that is used for price judgments. They have measured the internal reference point by asking respondents what fair price they are willing to pay for a specific item (Dickson & Sawyer, 1990; Lichtenstein & Bearden, 1989; Thaler, 1985; Thomas & Menon, 2007). Additionally, Cheng and Monroe apply prospect theory in the area of price behaviour to study the effect of lower and higher reference prices. They agree with evidence that consumers have a set of acceptable prices (Cheng & Monroe, 2013a). Without doubt, the reference price is at the core of all price judgments (Lee, 2013).

Arguably, to evaluate and perceive any change in price, consumers may need to know the actual price or reference price, as mentioned. Consumers may not remember every single price but may rely on reference price. Using the reference price, consumers may be able to encode and evaluate prices. Prices being presented differently in different channels may lead consumers to have negative responses. The buyer's attitude will be affected if the price of a product is unfair. Therefore, retailers manipulate prices across channels and explain disparate prices in terms of extra cost or effort. Often retailers set prices to be equal or lower than those of competitors (Choi, 1991).

Therefore, because determining the reference price range changes with time (see Bambauer-Sachse & Dupuy, 2012), it depends on the last purchase price. Shopping frequency differs between channels and the feature of comparing online prices is much easier online than

offline channel, so the reference price might differ for the multi-channel retailer. The expectations model perspective supports this statement (e.g., Kalwani et al., 1990; Kalyanaram & Little, 1994; Winer, 1986). A recent study finds that the reference price is influenced by the magnitude of a price discount in relation to a series of other discounts (Sheehan et al., 2019). Therefore, the reference price may also change across channels and affect noticing price differentiation between online and offline channels for the same retailer. This is due to noticing price differentiation when the current price is beyond the upper or lower bound of the reference price range. This may stimulate noticing a price difference across channels (Kalyanaram & Little, 1994).

In summary, when consumers evaluate prices, they process a multitude of reference prices and compare them to a normative social standard of price fairness (Kahneman et al., 1986b). The social norms of the evaluation process are constantly evolving (Kuo et al., 2016). In addition, the reference price is related to past purchase prices. The reference price is stored in the consumer's mind and is used to compare and evaluate future purchases. An increase in research interest in price promotions has led to study of the reference price in consumer decision-making (Han et al., 2001). It can be argued that the reference price range gives the ability to compare and evaluate the current price, and it might also lead to noticing price difference. If the reference price develops over time and influences noticing price differentiation, then noticing differentiation might differ between online and offline channels for the same retailer. More precisely, shopping online is easy to compare price which makes the range of reference price narrower than offline price. For example, the price range for a pair of jeans in the consumers' mind in offline store is between £10 to £40 but for the same product in online store the range could be between £10 to £25 which makes the distance of the lower and upper price range various between online and offline for the same retailer. Based on this, the thesis puts forward the following hypothesis:

H2a: Consumers have a narrower reference price range in the online channel than in the offline channel for the same retailer.

Price Sensitivity

In online shopping, consumers consider price to be an important factor so they perceive price more than other factors in buying decisions (Jensen et al., 2003). Degeratu, Rangaswamy, and Wu (2000) investigate whether increasing price information online makes consumers more price sensitive. They find that online consumers are more price sensitive than offline consumers (Degeratu et al., 2000). One study assumes that consumers who shop online to find affordably priced products are more excited when they get a low price from a retailer because they are sensitive to price (Chatvijit-Cook, 2017).

Han et al. (2001) find price sensitivity when consumers notice the difference between the current price and the reference price as it affects their choice. This might differ from channel to channel. They examine consumers' price sensitivity by using an approach that incorporates probabilistic reference price thresholds as price gains and losses. Consumers with low thresholds are more sensitive to price change than consumers with high thresholds (Han et al., 2001).

Previous studies in the area of price sensitivity have focused on important factors such as routine decisions in response to changes in price (e.g., Bucklin, Gupta, & Han, 1995), price format (e.g., Dhar & Hoch, 1996) and price framing (e.g., Lichtenstein & Bearden, 1989). Wakefield and Inman (2003) argue that previous studies focus on grocery stores and need to expand their focus to other industries. Price sensitivity research nowadays has expanded to different industries online and offline (Arce-Urriza et al., 2017; Karray & Sigué, 2018; Zhuang et al., 2018). However, there is a need to investigate whether price sensitivity is the same or

different across multiple channels because it is important to both marketing managers and researchers who are interested in the product evaluation and buying decision process.

The multiple channel environment may present different prices in the online and offline channels. Retailers charge a different price in view of cost and demand considerations (Neslin & Shankar, 2009; Wolk & Ebling, 2010). Researchers confirm that price sensitivity differs from channel to channel (e.g., Chu et al., 2008; Wolk & Ebling, 2010a). However, the grocery shopping process, for instance, is usually characterised by habitual and routine decision-making (Hoyer, 1984; Hoyer & Brown, 1990; Rhee & Bell, 2002). In this case, shopping is normal and even if consumers look at the price it is not easy to remember the previous purchase. Therefore, it can be argued that if the price changes it is difficult to notice the difference (Melis et al., 2016). Consumers have different responses to increasing or decreasing prices (Winer, 1988). When the price increases consumers will have a strong negative response, but when it decreases they will have a less strong positive response (Hardie et al., 1993; Kalwani et al., 1990; Kalyanaram & Little, 1994; Mayhew & Winer, 1992).

Price sensitivity is very important in noticing differences in price, so this thesis expects price sensitivity to be statistically significantly different between online and offline channels for the same retailer because of the online prices more transparent and much comparable than offline prices. Previous studies confirm that price sensitivity differs from channel to channel (e.g., Chu et al., 2008; Wolk & Ebling, 2010a) but they have ignored to study price sensitivity of different channels for multi-channel retailers. Consumers expect lower price online than offline channel which leads consumers to be more price-sensitive in online channels more than offline for the same retailer because of the pure-online retailers which make high competition in online prices. Based on this, the thesis puts forward the following hypothesis:

H2b: Consumers are more price sensitive in online channels than in offline channels for the same retailer.

3.4. Promotion Price vs. Regular Price

In both online and offline channels, consumers often encounter an external reference price (e.g., was £/now £) along with a reduced price in an attempt to communicate a deal. In addition, the external reference prices are labelled with semantic cues such as ‘compare,’ ‘original,’ ‘regular’ and ‘seen elsewhere’ (Bearden et al., 2003; Compeau et al., 2004; Grewal et al., 1996; Krishnan et al., 2006; Lichtenstein et al., 1991). The strategy of combining an external reference price with the selling price affects consumer responses (Carlson & Compeau, 2018; Compeau & Grewal, 1998; Urbany, Bearden, & Weilbaker, 1988).

Moreover, because consumers deal with hundreds of numbers every day, they cannot recall these numbers. A few studies have demonstrated how consumers evaluate price differences. They highlight that consumers may evaluate the absolute price according to the price presentation format (Bartels, 2006; Bonini & Rumiati, 2002; Choi & Coulter, 2012; Coulter, 2013; Peters et al., 2006).

Visual presentations and merchandise assortment strategies crafted by retailers motivate consumers to produce quick and immediate decisions when shopping online or in physical stores. Some of these strategies are promotion offers (Grewal et al., 2017) and aggressive discounts (e.g., online daily deals) (Carlson & Kukar-Kinney, 2018). It could be said that, because the strategy motivates the consumer to get the deal, if the price has increased the consumer might not be able to notice the price difference. Helme Falk (2017) argues that visual cues such as price, product offerings and other cues related to utilitarian properties are the most important for consumers. For example, visual perception (e.g., container height) sometimes misleads consumers to believe that there is more or less quantity of a substance (Helme Falk, 2017). Hence, this thesis expects that visual displays impact on perceiving deal value as gain and loss situations.

Furthermore, when frequent price reductions are offered, the reference price will update in the consumer's mind because consumers pay more attention to price discounts (Vanhuele & Drèze, 2002). Grewal et al. (2011) suggest that when there are promotional flyers in online and offline stores, retailers should determine the optimal strategy of whether to use a reference to a sales price or a percentage. After repeating sequential discounts, the price usually jumps back to the original price. Retailers can return to the original price or increase it. For example, for a known brand (e.g., 'nuts'), the original price (£2.5) is used when making an offer (e.g., was £2.5/now £1.50) so consumers will pay more attention to the price reduction. After a period of time the retailer might provide another price (e.g., was £2.7/now £1.70). In this case, consumers might not notice the price increase because they pay attention to the price reduction as a gain situation rather than to the whole price (e.g., Vanhuele & Drèze, 2002). It could be argued that the regular price/non-promotional price is more noticeable in price differentiation than the promotional price.

Goldsmith and Newell (1997) study appropriate strategies for pricing an innovative new product. They state that it is important to understand the importance of assessing the level of price sensitivity among consumers prior to and during the introduction stage of the product life cycle. Therefore, it is important to understand how different price formats can affect purchase intentions and noticing price differences in multi-channel retailers because price sensitivity in different channels for the same retailer might be asymmetric.

Researchers are very interested in price presentation formats and consider it an important research topic (e.g., Blattberg & Neslin, 1990; Neslin et al., 1994). However, few studies examine the relationship between store price format and consumer behaviour (Bell & Lattin, 1998). Therefore, the importance of the influence of promotional prices on consumer decisions as a part of price formatting leads the current study to empirically investigate both types of price format (promotional price and non-promotional price/regular price).

Bonini and Rumiati (2002) study how people respond to price changes using mental accounting shifts. They asked the participants in their study to either accept or not accept a price reduction. They found that the majority of their participants accepted the price discount (Bonini & Rumiati, 2002). This result agrees with earlier studies that the majority of people accept a price discount to save money (Tversky & Kahneman, 1981). It can be argued that if retailers want to hide a price increase because they consider it a disadvantage, the price increase should not reach the noticeable price threshold. On the other hand, if retailers want to decrease the price and make it obvious (e.g., provide a discount), they may use a highlighted colour label and post the external reference price (e.g., was £/now £) on the sales label.

For example, many retailers in the fashion industry offer promotions and make the discount clear to consumers. Often when retailers provide price discounts, they post the external reference price or use semantic cues (e.g., sales). In contrast, when prices recently increased for many retailers in the grocery industry, they used a very small amount of price change which is difficult to notice (e.g., £.05). Prior studies have identified 5% as the minimum threshold level for price differences to be noticeable (e.g., Fassnacht & Unterhuber, 2016; Sirvanci, 1993; Uhl & Brown, 1971). It could be argued that a 5% increase as a differential price threshold might differ between channels for the same retailer when using the condition of (regular price versus promotional price) due to gain and loss situation of the concept of prospect theory. For example, if a multi-channel retailer increases prices by 5% that consumers might notice price differentiation in the condition of regular price more than promotional price.

Prior studies have investigated the effects of framing on consumer information processing (e.g., Klein & Oglethorpe, 1987; Monroe & Chapman, 1987; Puto, 1987). Other researchers have studied how different price presentation formats (e.g., sales promotions) can frame a deal as a gain or reduce a loss (Diamond & Johnson, 1990; Kahneman & Tversky, 2013; Puto, 1987; Thaler, 1985). It could be argued that because the framing effect differs

depending on the price presentation format so price formats (regular price vs. promotional price) might affect the noticeable price difference.

In summary, price presentation formats differ between online and offline channels and this may occur in many respects such as in the price format, currency, a special label or website customisation. These differences may affect the numerical cognition of prices in multiple channels. The price format (promotional price vs. non-promotional price) might lead consumers to notice that price differentiation differs between online and offline channels. For instance, consumers might notice price differentiation if the non-promotional price is used more than when the promotional price is used because the framing effect of sales creates a cognitive bias in their minds that it is a great deal and this reduces the noticeable price difference. Based on this, the thesis puts forward the following hypothesis:

H3: For the same price increase, with a non-promotional price format a consumer is more likely to notice the price difference in regular prices than promotional price format.

3.5. The Impact of Noticeable Price Differences on Consumer Perception

Perceptions of Price Fairness

The concept of a 'fair' price has been investigated in different disciplines, for example in economics (Kahneman et al., 1986b) and marketing (Kamen & Toman, 1970). Hence, the concept is not new but the development of conceptual research and increased interest in price fairness is relatively recent (Dickson & Kalapurakal, 1994). Fairness can be judged from different perspectives so in general it can be defined as "a judgement of whether an outcome and/or the process to reach an outcome is reasonable, acceptable or just" (Bolton, Warlop, & Alba, 2003, p.474). In addition, it can be defined from a consumer perspective on retailing as the degree of perceived quality, honesty and justice a retailer has for a customer (Nguyen & Klaus, 2013, p.320). Fernandes and Calamote (2016) provide other definitions of price fairness.

Since the late 1990s, researchers have been studying additional psychological aspects of price fairness in depth (Campbell, 1999a; Mayer & Avila, 2014; Vaidyanathan & Aggarwal, 2003). Many other researchers have been interested in price fairness (e.g., Bolton et al., 2003; Campbell, 1999a; Compeau et al., 2004; Dickson & Kalapurakal, 1994; Haws & Bearden, 2006; Vaidyanathan & Aggarwal, 2003; Xia et al., 2004). Researchers have used and developed a variety of theories to study price fairness and unfairness and their possible antecedents (e.g., Bechwati et al., 2009; Bolton et al., 2003; Huppertz et al., 1978; Oliver & Swan, 1989; Xia et al., 2004). Xia et al. (2004) investigate the theoretical foundations of fairness perceptions and summarise empirical findings on price fairness. Bechwati et al. (2009) argued that a consumer who are thinking about buying a product not only consider what they will pay and get but will also consider the cost to the firm selling the product and its profit (Bechwati et al., 2009).

Dickson and Kalapurakal (1994) argue that price fairness may not matter to consumers either because they do not judge prices to be unfair or because fairness judgements have no impact on consumer behaviour. Dickson and Kalapurakal tend to ignore the fact that prices are often judged to be unfair and this leads to changes in consumer behaviour (Dickson & Kalapurakal, 1994). Most recently, Fernandes and Calamote (2016) have argued that when a retailer applies different pricing strategies through the use of targeted marketing tactics (Kimes & Wirtz, 2003; Nguyen et al., 2012) some consumers perceive the strategy to be unfair. Hence, understanding price fairness is increasingly important.

Recent research has studied the perception of unfairness through price discrimination using a survey-based experimental design approach (Fernandes & Calamote, 2016). It could be argued that the researchers used this method to be able to investigate price unfairness in each channel, online and offline. Campbell suggests that marketers should consider the pricing decision effectively. The importance of price fairness makes it a priority for the marketer to be

able to understand aspects of economic and psychological responses to price changes/price differentials (Campbell, 1999a).

Mayer and Avila (2014) state that there is a lack of empirical research into price unfairness in price increases and the consequences in terms of behavioural intent. Previous researchers have shown how consumers perceive price fairness and its outcomes for them (Bolton et al., 2010; Campbell, 1999a; Carlson & Weathers, 2008; Kuo et al., 2016; Sheng, Bao, et al., 2007).

Many consumers expect fair price-setting practices and they are sensitive to price increases. When a price increases, consumers consider it unacceptable or unfair (Mayer & Avila, 2014). The consequence of unfair pricing practices may negatively impact on company reputation and result in reduced profits (Campbell, 2007). Kuo et al. (2016) recommend marketing managers to set an effective pricing strategy considering how consumers view the fairness of prices. Managers must be aware of how some practices may lead to a negative impact on the firm (Kuo et al., 2016). It could be argued that this practice needs to be considered more carefully when managers set prices online and offline for the same firm. Kuo et al.'s (2016) argument corresponds with that of other researchers who emphasise the importance of fair pricing practice to avoid negative impacts (e.g., lower purchase intentions) on the firm (Bechwati et al., 2009; Campbell, 1999a; Grewal et al., 2004; Homburg et al., 2014; Martin et al., 2009).

To sum up, it is very important to understand that when consumers notice increased in price, they might perceive it as unfairness. Hence, if consumers perceive an unfair price, they will have negative reactions to the retailer. These reactions might differ from channel to channel for the same retailer. Some consumers accept differences in prices between channels for the same retailer and the prices have to be in the online channel lower than offline channel is due to selling online associated with a lower cost than offline channel (Fassnacht & Unterhuber,

2016). Therefore, when consumers notice increased in prices, they might accept changing in offline prices more than the online because the offline channel has a higher cost than the online channel. Based on this, the thesis puts forward the following hypothesis:

H4a: Perceived price fairness offline is higher than in the online channel for the same retailer when prices change.

Perception of Price Value

Perceived price value is an important mediating variable between purchase intentions and retailer offers (Rothenberger, 2015). Consumers perceive the price value of a product by comparing the product's utility and the price sacrificed (Sinha & Verma, 2020; Zeithaml, 1988). Consumers' perceptions of value are mental trade-offs between what they believe they gain from purchasing a product and what they sacrifice by paying the price (Rothenberger, 2015). The perception of psychological satisfaction obtained from receiving the advantage of a deal has been conceptualized as perceived transaction value (Grewal et al., 1998; Lichtenstein, Netemeyer, & Burton, 1990; Monroe & Chapman, 1987; Thaler, 1985). Sinha & Verma (2020) state that consumers will perceive price value when the benefits of the product are higher than the price sacrificed.

Perceived value is an evaluation of the overall price compared with what consumers give up or pay for that value (Bolton & Drew, 1991; Johnson et al., 2006). It is consumers' appraisal of the offer in terms of their perception of sacrifices and gains compared with a reference point (Gupta & Kim, 2007; Monroe, 1990; Vogel & Paul, 2015; Zeithaml, 1988). Perceived price value has two levels of consumer perceptions: referring to the specific product (Zeithaml, 1988) or to retailers' prices generally (Xia et al., 2004).

Vogel and Paul (2015) use perceived price value in the context of channel-based price differentiation. They extract this meaning from Sirohi, McLaughlin, and Wittink (1998), who

state that perceived value refers to overall perceptions of a retailer's offerings across different channels. Perceived price value can refer to an evaluation of the current price for a specific product's value after the consumer notices price differentiation.

In addition, Rothenberger (2015) shows that perceived price value and price fairness reflect what consumers gain relative to the monetary sacrifice they make. He shows that the greater the perceived monetary sacrifice is, the lower the perceived value of a product. Martins and Monroe (1994) show that the greater the unfairness of the price is perceived to be, the lower the value of a financially equivalent fair price is. Therefore, a fair price depends on perceived value when evaluating the monetary sacrifice to obtain the product (Rothenberger, 2015). It can be argued that when consumers notice price differentiation, the price value reflects consumers' perceptions of what they gain relative to the monetary sacrifice they make.

Wolk and Ebling (2010a) argue that retailers offer a regular price in the reference channel (e.g., an offline store) and lower prices in another channel (e.g., an online store). Prior research by Zeithaml (1988) suggested that perceived value should be high in the overall evaluation of the deal including product quality and the benefits derived from the offer, but the overall price should be lower (Vogel & Paul, 2015). In addition, Vogel and Paul (2015) argue that channel-based price differentials enhance consumer perceived value by increasing transaction value in different channels. They assume that lowering prices in one channel (e.g., an online store) compared with another channel (e.g., an offline store) might signal a good deal too and create pleasure for consumers (Vogel & Paul, 2015).

Researchers such as Dodds, Monroe, and Grewal (1991) and Vogel and Paul (2015) show that perceived value has significant implications for the success of firms. However, with the growing number of online stores and the increasing number of retailers who employ multiple channels, perceived price value has become much more complex for managers. It has been assumed that consumers who shop online to find affordably priced products are more

excited when they get a low price from retailers because they are sensitive to price (Chatvijit-Cook, 2017). It can be argued that consumers who use multiple channel retailers are looking for affordably priced products to get economic value and the variety of products and options online have made shopping much easier. However, when consumers notice the price has increased, they might perceived price value in offline higher than online channel because online prices always expect as lower price than offline channel. For instance, when a price of product increased, consumers might perceive a product has more price value in offline than online channel.

In conclusion, it can be argued that perceived price value after noticing price differentiation can be affected by whether the current price is worth paying or not. If consumers notice price differentiation, it might be affected by their perceiving low value. This might lead to lower purchase intentions. Consumers' perceptions of price value might be significantly different between online and offline channels for the same retailer. Based on this, the thesis puts forward the following hypothesis:

H4b: Perceived price value offline is higher than in the online channel for the same retailer when prices change.

3.6. Sales Promotion Formats

According to Kotler and Keller (2009, p. 527), sales promotions are tools that are used to get stronger and quicker consumer responses and they often have short-run effects. They are attractive marketing tools (Drechsler et al., 2017). According to Mullin and Cummins (2008, p. 36), sales promotions involve incentives and offers that encourage people to behave in a particular way at a particular time and place, and they are usually delivered by means of other promotional tools, such as advertising and direct marketers. The importance of sales promotions

lies in the fact that they stimulate consumer purchasing and retailer effectiveness (Lamb et al., 2011).

Retailers tend to use different price reduction formats during promotion campaigns. For instance, they may use an external reference price (e.g., was £30/ now £20) or not (e.g., SALE £20). The promotional price is important in marketing competition. It is price promotion through a temporary price reduction (Bogomolova et al., 2015).

Monetary promotions (e.g., sales) are most likely to be framed as reduced losses which lead to reducing the reference price (Diamond & Johnson, 1990) and can be framed as a 'gain' (e.g., was £/now £) depending on the price format. A typical example of sales promotions is a temporary price reduction (Gedenk et al., 2006). Minahan and Ogden-Barnes (2015) state that many discounts can take several forms, including £ off, % off, and was/now pricing. Gedenk et al., (2006) argues that sometimes different price frames (e.g., external reference prices, price cuts expressed as percentages) can have strong effects. Studies have analysed and compared different price frames, for instance '% off' versus '£ off' promotions (Berkowitz & Walton, 1980; Chen et al., 1998; DelVecchio, Krishnan, & Smith, 2007; Drechsler et al., 2017; Gamliel & Herstein, 2012; Grewal et al., 1996; McKechnie, Devlin, Ennew, & Smith, 2012; Mishra & Mishra, 2011). Promotions help to maximise the utility and effectiveness of consumers' purchases if they perceive them as an opportunity to achieve a financial gain, and they help retailers to increase short-term sales volumes (Asrinta, 2018; Chandon et al., 2000).

Retailers can choose between absolute (£) or relative price discounts (%) depending on the price level of the promoted product (Chen et al., 1998). The psychological utility derived from saving a fixed amount of money is explained by the psychophysics of price heuristic theory (Grewal & Marmorstein, 1994). This shows that consumers are more likely to be happier when saving absolute money (£) when the price is high (e.g., saving £100 on a £1000 travel

ticket) and when they get a relative price discount (%) for low priced products (e.g. 20% off when purchasing a £2 drink) (Mattila & Choi, 2014).

Grewal et al. (2011) suggest that retailers should consider some insights before designing price promotional offers. Retailers face complicated issues when setting and designing promotions for different departments in the same store. The prices for each department differ. For example, the grocery department has lower priced items than the electronic items department. In this department price savings are processed and framed in a relative fashion (Lindsey-Mullikin & Grewal, 2006) as consumers tend to evaluate promotions with more value, e.g., £5 off £10 more than £5 off £100. For large purchases consumers seem to prefer savings in percentages rather than in pounds (see Chen et al., 1998; DelVecchio et al., 2007; Grewal et al., 2011).

Shoppers often see a wide range of product price information in their daily lives so they often rely on evaluating deals through a framework of mental norms (Mazumdar et al., 2005; Minahan & Ogden-Barnes, 2015). Although there are some controversies about the various price presentation promotion formats, most researchers hold that price promotions give consumers additional monetary value (e.g., Kotler & Keller, 2009). Evidence in the literature suggests that price promotions can erode reference prices as mental norms (Scriven et al., 2017). This increases the difficulty in dealing with offers. Although consumers might buy a discounted product because of an attractive price, it may not be necessary for them to repurchase that product (Minahan & Ogden-Barnes, 2015). It can be argued that, because promotional prices attract consumers, when retailers need to increase a price, they should consider that the reference price changes with time and price increases should be done gently to reduce the noticeable price difference.

Another issue that retailers face in designing an optimal discount is the depth of the discount and perceived quality. Popular daily deal discounts are between 30% and 50% and the

accepted effective range is between 10% and 30% (e.g., Leng & Marshall, 2002; Gupta & Cooper, 1992). If deep discounting creates perceptions of poor quality then it may not be seen as good value (Parsons et al., 2014) and may reduce purchase intentions (Gauri et al., 2017). Researchers argue that price discounts, especially deep discounts, increase customer traffic and sales of complementary products (Gauri et al., 2017). Studies show that discount presentation is a major determinant of a promotion's effectiveness (Krishna et al., 2002) and consumers might evaluate promotions differently (Drechsler et al., 2017; Liu & Chou, 2015; Raghurib, 2004). It seems that consumers are less likely to ask questions when products are in sales. They might have little reason to question the offer and use a heuristic decision or a limited set of attributes to evaluate the offer (e.g., Meyers-Levy & Tybout, 1989; Weathers, Swain, & Makienko, 2015).

Price is one of the important variables that affect consumers' purchase decisions, so a discount can be accompanied with the price to increase the perceived value of a product (Isabella et al., 2012). Promotion are usually signalled with words such as 'sale,' 'special' or 'save.' These practices dominate many shopping environments (Bogomolova et al., 2015). Breugelmans and Campo (2016) analyse the effect of price promotion in a multi-channel shopping environment in terms of purchase incidence and product quantities. Other researchers have investigated the effects of promotion in terms of choice/switching products (Ailawadi et al., 2007; Bell et al., 1999; Van Heerde & Neslin, 2008).

In prospect theory, consumers perceive prices framed as gains (e.g., discounts) to be fairer than ones framed as losses (e.g., surcharges) even if both deals are equivalent (Chen et al., 1998; Wirtz & Kimes, 2007). However, price fairness might differ across cultures. For example, Choi and Mattila (2006) find that consumers in the USA tend to perceive dynamic pricing practices to be fairer than Korean consumers do (Mattila & Gao, 2016).

Young, Gendall, Hoek, and Pope (2006) empirically study price strategy in terms of how framing affects consumer behaviour. Researchers have argued that setting price promotions requires two key decisions: the type of deal and the depth of the discount (Bogomolova et al., 2015). According to Bogomolova et al. (2015, p. 1), "common industry practices and trends have not been systematically documented ... [this] is essential for the alignment of academic research."

With increasing competition, retailers tend to use promotions more often. Research extends our knowledge by investigating different presentation formats of monetary promotion that make it less likely for price differentiation to be noticed. Many monetary promotion studies, such as Chen, Marmorstein, Tsiros, and Rao (2012), DelVecchio et al. (2007) and Sinha and Smith (2000), investigate different conditions that provide the same amount of saving but consumers perceive differently. It can be argued that different framing effects for the same amount (unit cost) of discount in monetary promotions make consumers feel a deal has value and might make them less likely to notice price differentiation. Thaler (1985) argues that price promotions might be framed as gains or losses. In the gain situation, the framing effect will segregate the benefit from the original purchase price while a promotion framed as a loss will only be perceived as a reduction in the original purchase price.

Prospect theory demonstrates that the framing effect can result in a gain or a loss situation. Hence, this study uses three different promotional price formats of the same discount (external reference price with now price, reduced price now and saving price). A study by Chen et al. (1998) shows that a 'percentage' is more effective for low priced items and an 'amount' is more effective for high priced items. This study assumes that different types of monetary promotion have significant differences in their framing effects. 'Was £/now £' is a gain situation because it has an external reference price, and the price is judged on the basis of the reference price not on its absolute magnitude (Janiszewski & Lichtenstein, 1999; Niedrich et al., 2001).

It can be argued that because the reference price influences purchase intentions, the internal reference price might be updated by the new external reference price in a monetary promotion (was £/now £) (Homburg et al., 2005a).

‘Now £’ is a loss situation because although the price is reduced as a cue of price change, the consumer might consider the attendant monetary sacrifice as a loss situation. ‘Save £’ is a gain but it has less influence than the format of the external reference price, which means consumers might frame that price as a gain because they see the amount of the reduction but that amount might not be enough to represent a good deal. Simultaneously, consumers will consider it as a loss situation based on the money sacrificed to purchase the product. Based on this, the thesis puts forward the following hypotheses:

H5a: When a monetary promotion strategy is used, consumers are less likely to notice the price difference in an external reference price format (i.e., was £/now £) than in a reduced price now format (i.e., now £).

H5b: When a monetary promotion strategy is used, consumers are less likely to notice the price difference in an external reference price format (i.e., was £/now £) than in a savings format (i.e., save £).

H5c: When a monetary promotion strategy is used, consumers are less likely to notice the price difference in a savings format (i.e., save £) than in a reduced price now format (i.e., now £).

3.7. Non-Monetary Promotions

Non-monetary promotions are alternatives to price-based promotions which add value to the product rather than discounting prices. Examples are a free gift, a bonus size product, a discount on a further unit purchase and a sweepstake (competition) entry. In some sensitive categories including cosmetics and home electronics, retailers often use free gifts and avoid discounting (Minahan & Ogden-Barnes, 2015). Sometimes non-monetary promotions are referred to as

premium promotions. In these promotions a reward may be certain (guaranteed as a result of purchase) or uncertain (a chance to enter and win a prize). While discounting offers utilitarian (functional) benefits, some non-monetary promotions can be perceived as appealing to hedonic (pleasure-seeking) motivations, especially those with an engagement, education, fun or challenge aspect included (Minahan & Ogden-Barnes, 2015).

There are important forms of non-monetary promotion which are especially popular for grocery goods or fast fashion products, such as bounce packs and buy one get one free (Chen et al., 2012). Andrews (2016) examines the influence of non-monetary promotion (e.g., buy one get one free, 50% off) as functions of different forms of information diagnosticity. Further promotion strategies include free samples, contests, premiums, trade shows, vacation giveaways and coupons (Lamb et al., 2011). However, some researchers such as Banerjee, (2009) and Mullin and Cummins, (2008) agree that price promotions attract consumers more than non-price sales promotions.

One of the controversial issues related to price discounts is the discount duration. This is the length of time the discount is in effect (Inman et al., 1997). Consumers might expect a larger discount to have a shorter duration (Carlson et al., 2007) and smaller discounts to have longer durations (Weathers et al., 2015). Weathers et al. (2015) state that few studies directly examine the joint effects of discount size and duration. Duration is a signal of a good deal in consumers' minds (Inman et al., 1997). Cheema and Patrick (2008) find that discount size and framing the duration as expansive (e.g., any time) rather than restrictive (e.g., only) increases consumers' deal evaluations (Weathers et al., 2015).

A recent study investigates retail formats and message contents. It measures sales and the attractiveness of price promotion deals using message content seasonal cues (Roggeveen et al., 2016). However, it does not go deeper to investigate the effect with and without the seasonal cue. Hence, we do not yet know how cues with and without seasonal cues influence noticing

price differentiation. Although non-monetary promotions have been well-studied – for instance, buy one get one free and extra free product – there is a dearth of studies of time-limited deals. These encourage consumers to purchase quickly (see Inman et al., 1997; Tan & Hwang Chua, 2004). The duration of the discount is more effective in flash deals, daily deals and seasonal deals, which provide heavily discounted rates for limited hours or days (Mattila & Gao, 2016; Parsons et al., 2014; Piccoli & Dev, 2012).

Some researchers use the term ‘temporary discounts’ (e.g., Carlson et al., 2007; John, 1999; Wright et al., 2005). Retailers tend to use semantic cues to indicate a great deal. Some evidence suggests that semantic cues may play an important role in consumers’ responses (Carlson & Compeau, 2018; Grewal et al., 1996; Krishnan et al., 2006). This thesis will use ‘Black Friday’ to refer to seasonal cues. Based on prospect theory, the thesis considers that non-monetary promotion (seasonal and non-seasonal) may influence the framing effect. Based on the above, the thesis puts forward the following hypothesis:

H6: When presenting a non-monetary promotion, seasonal semantic cues (Black Friday) make it less likely that price differentiation will be noticed than in deals with non-seasonal semantic cues.

3.8. The Effects of High vs. Low Channel Integration on Noticing Differences

Channel integration has developed from multiple channel systems. There are many differences between channel integration and multiple channels such as the implementation objective, operation mode and consumer experience (Zhang et al., 2018). The main benefits of multi-sided digital platforms from the consumer’s perspective are convenience and variety (Hänninen et al., 2017). Previously, consumers were only able to compare between online platforms. Nowadays, consumers are able to access and check product information online while shopping in a physical store and they can compare competitors online (e.g., Jun et al., 2004). Therefore,

multi-sided markets or channel integration are becoming the dominant retail business model. This has created a need for new knowledge on the topic and understanding of platform-based businesses and their implications for the entire retail sector (Hänninen et al., 2017).

Channel integration might create a cognitive bias due to perceptions of low risk (see Albert & Steinberg, 2011; Simon, Houghton, & Aquino, 2000). There are several types of cognitive bias. One of the most important types that affect consumers' evaluations of a deal are the mental shortcuts known as 'heuristics.' Some researchers argued that these are less problematic in developed countries than in developing countries, which still feel risk and insecurity about shopping online (Faqih, 2016; Javed & Wu, 2019). Zhang et al. (2018) find that perceived channel integration positively correlates with trust, satisfaction and patronage intention. It can be argued that when consumers perceive full channel integration it might influence their purchase intentions when noticing price differentiation because of the quality relationship, value fairness and promotional price attractiveness.

This thesis uses what Herhausen et al. (2015) call online-offline channel integration (OI). With the development of technology, many consumers seem to search online and purchase offline, or vice versa. It is difficult to use channel-based price differentiation when retailers have highly integrated channels (e.g. the possibility of returning a product bought online to any physical store) because prices and services should be equal in both channels. However, retailers sometimes use different promotions in different channels (e.g., a coupon discount only in their online store). Chatterjee (2010) argues that retailers allow cross-channel transfers of information, money and goods to maintain uniform pricing, positioning and merchandising strategy online and in stores. However, this strategy limits the ability to respond to local competition and creates pricing conflict across channels for the same retailer (Tang & Xing, 2001).

Ailawadi and Farris (2017) highlight the important issues that retailers wrestle with as they move toward managing multi-channel and omni-channel distribution operations (Grewal et al., 2017). Therefore, when consumers shop in online-offline channel integration, they perceive the retailer to be low-risk (Herhausen et al., 2015). It can be argued that cognitive bias works as a distractor from looking for price changes but leads consumers to look at a deal in general to perceive gain value. In this situation, consumers are less likely to notice price differentiation. Therefore, this study assumes that channel integration influences the relationship between price presentation and noticing price differentiation.

Although there are many studies of monetary and non-monetary promotions, to the best of the present author's knowledge there are no previous studies investigating the role of channel integration in noticing price differentiation in monetary and non-monetary promotions. Hence, this study will investigate monetary and non-monetary promotions with high/low channel integration as it might frame consumers in a gain situation making them more satisfied with a retailer and feel that dealing with a multi-channel retailer is less risky. The study assumes that when consumers see a promotional price with semantic seasonal cues in a highly channel-integrated retailer, they might focus more on getting the product and be less likely to notice price differentiation.

Thelen and Berman (2004) propose some characteristics of integrated online and offline channels to improve revenue, such as integrated promotions, pricing and inventories. Herhausen et al. (2015) investigate the influence of synergy strategies on consumers' search intentions, purchase intentions and willingness to pay. Zhang et al. (2019) argue that a synergy strategy leads to a competitive advantage. However, there is a different cost of selling online compared with the offline channel. Often it seems that online shopping has an extra cost (e.g., shipping and handling), so consumers might evaluate all-inclusive prices differently to partitioned prices (Fassnacht & Unterhuber, 2016).

Thus, channel integration gives a competitive advantage to purchasing a product any time anywhere and the advantages of fully integrated channels (free shipping) might reduce the ability to notice price differentiation if the price increases. Where the concept of gain and loss situation in the prospect theory might play a main role of noticing price differentiation in high channel integration compare with low channel integration. Based on this, the thesis puts forward the following hypotheses:

H7a: With high channel integration, consumers are less likely to notice price differences than with low channel integration.

H7b: Channel integration moderates the effect of promotion formats on noticeable price difference, so in high channel integration, the monetary and non-monetary promotions will result low level of a noticeable difference compare with the low channel integration.

3.9. High vs. Low Expectations of Lower Price Online on Noticing Differences

This study uses the term ‘expectation of lower prices online’ (ELPO) to refer to the expectation that online prices will be lower than offline prices (see Lo, Chou, & Teng, 2013; Lo et al., 2014). Previous studies find that consumers expect online prices to be 8%-10% lower than offline prices (Jensen et al., 2003). Another study demonstrates that the prices of pure-internet retailers are significantly lower – by an average of 14 % – than prices in offline or multi-channel retailers (Tang & Xing, 2001).

The expectation of lower prices online compared with offline prices has led researchers to study the effect of consumer perceptions on price differentiation. For instance, price fairness online and offline when the price increases for the same retailer has been studied. Consumers are more likely to consider an increase in price is fair if the online price is lower than the offline price (Fassnacht & Unterhuber, 2016). Previous studies have experimentally investigated perceptions of online prices regarding overhead costs and internal reference pricing. They show

that consumers perceive online prices to be lower than offline ones because they consider the overhead costs online to be lower than store-based retailers' overhead costs (Lo et al., 2014). Retailers realise the importance of consumers' perceptions of price fairness when making logistics decisions. This is because consumers can easily compare and evaluate prices in online retailing when there is intense competition among pure-online retailers and multi-channel retailers (Jones et al., 2019).

Some researchers argue that consumers do not see a difference between products purchased in online and offline channels. However, consumers perceive and react differently to prices of products purchased in online and offline channels (Buxmann et al., 2007; Grewal et al., 2010; M. Lee & Yuan-Shuh Lii, 2005). Consumers believe the prices in the online channel should be lower or cheaper than in the offline channel (Huang et al., 2005; Jensen et al., 2003; Lee & Yuan-Shuh Lii, 2005; Mitra & Fay, 2010; Suter & Hardesty, 2005; Zhou, Dai, & Zhang, 2007). Some consumers perceive unfairness when online prices are equal to or higher than offline channel prices (Huang et al., 2005).

Online shoppers are more concerned about lower prices, monetary value and special offer products (Yu, 2008). Product prices are one of the most important reasons for consumers to shop in an online channel (Kim, Xu, & Gupta, 2012; Lo et al., 2014; Waldeck, 2005). This thesis argues that when consumers perceive high level of online prices to be lower than offline prices, they might be less likely to notice price differentiation in online-offline channel integration. In addition, when displaying monetary and non-monetary promotions in online-offline channel integration, a consumer who perceives high level of online prices to be lower than offline prices might be less likely to notice price differentiation. Based on this, the thesis puts forward the following hypotheses:

H8a: The greater the expectation of lower prices online, the less consumers are likely to notice price differentiation when shopping in online-offline channel integration, compared with low level of expecting lower prices online.

H8b: Expecting lower prices online moderate the effect of promotion formats on noticeable price difference, so in high level of expecting lower prices online, the monetary and non-monetary promotions will result low level of a noticeable difference compare with low level for expecting lower prices online.

3.10. The Mediation of Consumer Perceptions in Purchase Intentions

Purchase intention refers to whether or not consumers are willing to buy products at a price (McDaniel & Gates, 2014). It can be defined as the probability of consumers purchasing a product (Dodds et al., 1991). According to Ammar and Alleil (2019, p. 71), “Intention refers to consumers’ perceptions of their future behaviour.” Hence, the consumer’s future behaviour will be to get the product which means a likelihood of intention to purchase the product (Ammar & Alleil, 2019). In addition, Munnukka (2008) has proved that purchase intentions are positively associated with price perceptions. Young and Aitken (2007) find that a cash discount has an impact on consumers' perceptions and also consequently influences purchase intentions.

According to mental accounting theory and prospect theory, consumers make choices based on segregated evaluations of attributes in a multiple gain frame (Gupta & Kim, 2007). Evidence from prior research suggests that consumers’ re-purchase intentions are related to consumer price perceptions (Dodds et al., 1991; Monroe & Chapman, 1987). Therefore, the indirect effect of a perceived positive or negative price on purchase intention is based on price perception (Gupta & Kim, 2007).

Consumers with much experience of facing price differentiation across channels might find that manipulation between online and offline channels by the same retailer is unfair,

especially if the difference between the two prices is big. Consumers may be able to remember the prices of known brands. Therefore, when consumers know the actual price or reference price, price differentiation becomes noticeable. It can be argued that if consumers notice price differentiation between channels, it may affect their purchase decision. If the practice is repeated, consumers may shift to other retailers (Melis et al., 2015).

Over the past three decades, many studies on price differentiation have emphasised the use of a reference price and asymmetric price response effects (Emery, 1970; Hardie et al., 1993; Kalwani et al., 1990; Kalyanaram & Little, 1994; Krishnamurthi et al., 1992; Mayhew & Winer, 1992; Putler, 1992; Winer, 1986). Researchers argue that asymmetric prices affect differentiation responses to prices above and below the reference price range. Thus, when the price is below the reference price range consumers perceive it as a gain, while when the price is above the reference price range it is perceived as a loss. Consumers react negatively in a perceived loss situation and positively in a perceived gain situation (Hardie et al., 1993; Kalwani et al., 1990; Kalyanaram & Little, 1994; Mayhew & Winer, 1992; Putler, 1992). It can be argued that the negative situation might happen if consumers perceive the price as expensive or other factors reduce the perceived price value.

Consumers usually do not accept price increases, but firms often need to increase their prices. For instance, Apple recently raised prices for some of its products by about 30% in many countries. Consumers hate prices increases, which might risk their relationship with sellers which they consider unfair (e.g., Bolton et al., 2003; Xia et al., 2004). However, Dutta et al. (2017) argue that perceptions of the fairness of price increases might be contingent on relevant factors. Monetary and non-monetary promotions might impact on consumers' perceptions of price fairness when prices increase.

Moreover, the violation of social or industry norms plays the main role in evaluating a price-setting strategy (Kuo et al., 2016) as fair (Dickson & Kalapurakal, 1994), which can have

a positive effect on purchase intentions (Campbell, 1999a; Kukar-Kinney et al., 2007). On the other hand, if pricing (e.g., price differentiation) is seen as unfair or a violation of community rules it can lead to negative responses (Heyman & Mellers, 2008; Maxwell, 2002). Dickson and Kalapurakal (1994) suggest that even if a higher price in the acceptable range might lower utility a consumer will not directly judge the price to be unfair. It might be judged according to whether the price-setting process or mechanism conforms to industry norms and individual ideological beliefs. Thus, when consumers find price differentials, they might not directly judge the price to be unfair, and monetary and non-monetary promotions might influence the consumer to reduce feelings of price unfairness. When consumers see a price promotion, they might perceive it as a great deal even if the price has been increased.

In addition, prior evidence suggests that satisfied consumers are willing to pay more than dissatisfied customers (Homburg et al., 2005b). A satisfied consumer should have a higher propensity to pay a given price than a dissatisfied customer. However, increasing prices might lead to reducing the consumer's propensity. On the other hand, consumer trust is an essential component of a quality relationship. Trust is considered an important concept to maintain successful or quality relationships between consumers and retailers (Moorman et al., 1993; Morgan & Hunt, 1994; Sirdeshmukh et al., 2002). Konuk (2018) argues that fairness can be considered a fundamental condition for trust.

The above discussion has focused on the nature of the relationship between noticing price differentiation and purchase intention. This thesis assumes that consumer perceptions mediate between noticing price differentiation and purchase intention through perceptions of value fairness, a quality relationship and promotional price attractiveness. In this study three consumer perceptions of prices have been identified: perceived value fairness, a quality relationship and promotional price attractiveness.

Perceived Value Fairness

This thesis uses the term ‘value fairness,’ which includes the perceived price value and price fairness. It refers to the consumer’s perception of the value of the price as fair when evaluating a specific product in a promotional deal. Some studies such as Vogel and Paul (2015) have investigated fairness and value as one component in measuring consumer perceptions.

Recent marketing research has taken an interest in the area of understanding unfair behaviour by firms towards consumers (Fernandes & Calamote, 2016; Nguyen & Klaus, 2013). Some researchers (e.g., Campbell, 1999a, 1999b; Kahneman & Tversky, 2013) have investigated perceptions of price (un)fairness from the consumer’s perspective, including whether pricing is seen as right, just and legitimate or wrong, unjust and illegitimate. These perceptions influence, for instance, purchasing intentions and willingness to pay (Campbell, 2007). Since perceptions of unfairness might weaken the relationship between buyer and seller (Frow et al., 2011), unfairness can lead to negative reactions among consumers (Rondán-Cataluña & Martín-Ruiz, 2008). Previous research shows that the price fairness of an offer is a critical determinant of consumer response (Bolton et al., 2010; Campbell, 1999a; Carlson & Weathers, 2008; Kuo et al., 2016; Sheng, Parker, et al., 2007).

Kuo et al. (2016) argue that consumers evaluate price fairness based on two distinct components of the offer: the price and the strategy that determines the price (Ferguson et al., 2014; Heyman & Mellers, 2008). They weigh external information on the two components as strong or weak justifications of the offer's pricing. The perception of price fairness depends on comparisons with other retailers' prices, retailer costs or retailer profit (Bolton & Alba, 2006; Ferguson et al., 2014; Kahneman et al., 1986a, 1986b; Kuo et al., 2016; Xia et al., 2004). Recent research suggests that price fairness has a positive effect on purchase intentions (Homburg et al., 2014; Kukar-Kinney et al., 2007) and price unfairness has a negative effect (Campbell, 1999b; Fernandes & Calamote, 2016; Konuk, 2018). Research shows that one of the most

effective ways to improve purchase intentions is to improve and increase the perception of price value (Sirohi et al., 1998).

Although a small change in price can have a dramatic impact on firm profitability, the price of a product is often the most influential factor in deciding whether to purchase a product (Bechwati et al., 2009). Research shows that a perceived unfair price influences consumer choice (Sinha & Batra, 1999), attitudes toward the seller (Maxwell, 2002) and consumer satisfaction (Oliver & Swan, 1989). However, some price strategies set to attract consumers are seen as unfair (e.g., heavily discounts) (Bechwati et al., 2009).

Perceived Quality Relationship

Many empirical studies show that satisfaction is positively related to trust (e.g., Bloemer & Odekerken-Schröder, 2002; Delgado-Ballester & Luis Munuera-Alemán, 2001; Selnes, 1998; Wang, 2002; Zboja & Voorhees, 2006). Researchers also indicate that consumer satisfaction and trust are positively associated with purchase intentions (Fernandes & Calamote, 2016; Jones, Mothersbaugh, & Beatty, 2002; Konuk, 2018; Oliver, 1980; Tudoran, Olsen, & Dopico, 2012; Zboja & Voorhees, 2006). It can be said that a quality relationship which includes trust and satisfaction influences purchase intention positively.

Consumer satisfaction is one of the consumer behaviour concepts most discussed (Konuk, 2018). For instance, studies have confirmed the positive effect of satisfaction on retention (Gustafsson et al., 2005), retailer profits (Anderson, Fornell, & Lehmann, 1994; Hallowell, 1996) and consumers' willingness to pay and purchase intention (Homburg et al., 2005b). When consumer's expectations are met, satisfaction occurs. Otherwise, disconfirmation results in dissatisfaction. Satisfaction has been conceptualized as having cognitive and affective dimensions (Homburg et al., 2006; Konuk, 2018).

Consumer satisfaction can be defined as pleasure resulting from purchasing from a firm (Anderson & Srinivasan, 2003; Christodoulides & Michaelidou, 2010; Khan & Hameed, 2017). It is the outcome of a purchase when consumers compare the costs and rewards with their expectations of the services or goods bought (Riquelme et al., 2016). It is also defined from another perspective as an individual's subjectively derived favourable evaluation of an outcome or experience associated with consuming a product (Cronin et al., 2000; Westbrook, 1981). Hence, consumer satisfaction happens when the consumer compares the cost with the product received. When the cost or the price of a product is framed as a gain (e.g., price discounted) it can increase satisfaction and lead to a purchase intention.

Konuk (2018) recently argued that most consumers do not stop dealing with a company when it increases its prices, and any increase in prices usually goes directly to the bottom line. Consumer's overall trust in retailers serves as a buffer to reduce negative effects when perceiving an unfair price (Xia et al., 2004). It might also reduce negative effects when consumers notice price differentiation.

Homburg et al. (2005a) conducted an experiment with three price levels. They assumed that when consumers have a negative reaction to a price increase, higher satisfaction will influence repurchase intentions. They asked participants in a pre-test to indicate the lowest price increase that could have an impact on their purchasing behaviour. The range went from 2.5% to 15% (Homburg et al., 2005a). It is important to investigate a higher price increase (e.g., 20%) to understand how the increase impacts on consumer behaviour, especially on purchase intention. It can be argued that the less price differentiation is noticed the greater the level of the quality relationship. A quality relationship has a positive relationship with purchase intention.

In conclusion, since retailing firms have faced market pressures to deal with consumers across multiple channels, retailers always try to satisfy consumers and maximise their profits

(Chatterjee, 2010). Therefore, it is very important for retailers to reach a high-quality relationship with consumers to increase purchase intentions.

Promotional Price Attractiveness

Promotional price attractiveness means that the price is a great deal. Often the great deal is a promotion (e.g., discount price). Retailers try to provide an attractive price to keep customers (Rotemberg, 2008). Many retailers use price promotions in very competitive circumstances to maintain their customers. Consumers tend to evaluate prices based on price presentation formats. When consumers see a promotional price, they might consider it attractive based on the benefits they will gain from the deal. Retailers use various forms of deals to attract consumers.

There are some important strategies that retailers should consider when designing deals. One is deal planning. Deal planning refers to the time of the promotion and how many promotions there will be in the whole year. It also refers to the depth and duration of the promotion (e.g., a week or a day) (Sotgiu, 2010). Second, evaluations of the price might be contingent on the way that the price is framed in the deal (e.g., promotion) (Darke & Chung, 2005; Krishna et al., 2002). Consumers have different reactions depending on promotion formats (e.g., price cut) (Macé & Neslin, 2004; Sotgiu, 2010; Wansink et al., 1998). Therefore, promotional price attractiveness varies in terms of how consumers frame the promotion based on price presentation formats.

Studies show that prices have a negative effect on perceived value and purchase intention (e.g., Dodds et al., 1991). At the same time, prices can have a positive effect on perceived product effectiveness (Menon et al., 2016; Shiv et al., 2005). Hence, promotional price attractiveness influences purchase intentions.

Some evidence suggests that the colour used in a price promotion may serve as a heuristic cue that influences consumer perception (Puccinelli et al., 2013). Retailers tend to use red in price promotions to signal the value they are offering. It has been found that when changing the visual presentation of prices there is a little effect on consumer perception (Coulter & Norberg, 2009). For instance, Coulter and Coulter (2005) study the different fonts of prices in advertisements and find that there is a difference between sale prices in a smaller font and regular fonts in offering better value. This might also lead consumers to notice price differentiation less when they perceive high value, as mentioned early regarding gain situations in prospect theory. Hence, these shreds of evidence might influence purchase intentions through consumer perceptions when noticing price differentiation.

Based on the above discussion of perceived value fairness, a quality relationship and promotional price attractiveness, this thesis puts forward the following hypothesis:

H9a: Perceived value fairness mediates the effect of noticeable price differences on purchase intention.

H9b: Perceived a quality relationship mediates the effect of noticeable price differences on purchase intention.

H9c: Perceived promotional price attractiveness mediates the effect of noticeable price differences on purchase intention.

3.11. Chapter Summary

Chapter Three provided the framework for the two studies: noticing price differentiation in multi-channel systems; and online-offline channel integration. The first study focuses on understanding in depth noticing price differentiation with three price thresholds and price presentation formats. It investigates the antecedent factors that influence the just noticeable difference when prices change in a multiple-channel context. The second study goes deeper to

understand the influence of different monetary and non-monetary promotions on the basis of the results of the first study.

The most important aim of multiple channels is to meet consumers' needs and requirements because a single channel is unlikely to be able to meet all of them (Hahn & Kim, 2009). One of the most important reasons for retailers to shift to multiple channels is to apply convenience-oriented retail innovations, which means that consumers get products more conveniently. This is considered one of the most important and successful practices in marketing (Campo & Breugelmans, 2015; Nielsen, 2014). In addition, some consumers prefer online-offline channel integration because it provides an option to 'buy online, pick up in-store' (click and collect). On the other hand, retailers apply click and collect to maintain or drive sales. The use of multiple channels can increase their turnovers (Hahn & Kim, 2009; Levy & Weitz, 2004).

Monroe, who published his works in the *Journal of Marketing Research*, was one of the first researchers to combine just noticeable difference with pricing (Monroe, 1973). Monroe's early research dealt with price as an economic outcome variable and not as a number. Later research by Monroe established that price can induce behavioural changes in consumers. Monroe found that there are thresholds above or below which consumers will not change their purchase intentions. Therefore, an internal reference price is described as a way to evaluate prices and deals.

This research tries to investigate whether the reference price range is the same or differs across channels for the same retailer. The research assumes reference price ranges are different when comparing the size of price ranges online and offline. Similarly, price sensitivity is assumed to differ between online and offline channels for the same retailer. Melis et al. (2016) point out that consumers who engage in complex shopping patterns by interchangeably visiting online and offline stores are trying to maximise utility to increase their shopping value. Some

consumers prefer to search for products and purchase them online and then enjoy the service offline, which is called online to offline (Rampell, 2010). Therefore, consumers shopping in physical stores may simultaneously enjoy online services. It is reported that 89% of US consumers search online and purchase offline (DigitasLBI, 2014). In contrast, in the Chinese market, 84% of consumers search for a product in a physical store and then purchase it online (Yang et al., 2016). Therefore, it can be argued that consumers are more aware of price differentiation between online and offline channels.

Monetary and non-monetary promotions (e.g., price cut and time-limited) will frame deals as more valuable gain situations, which might lead to decreasing noticeable price differentials. Prospect theory explains how consumers frame deals as gains or losses depending on the presentation of the deal. For instance, monetary and non-monetary deals (e.g., 50% vs. buy one get one free) differ in how they are perceived. To the best of the present author's knowledge, no research has yet investigated the antecedent factors that influence consumers to notice price differentials in multi-channel retailers.

A commercial report suggests that multi-channel shoppers spend more because they have higher incomes (Stringer, 2004). However, Chatterjee (2010) argues that the report does not show whether multi-channel shoppers spend more because of the greater accessibility of multiple channels (Chatterjee, 2010). On the other hand, prior studies (e.g., Dutta et al., 1995) show that the benefits of using multiple marketing are due to exploitation of synergies across channels and savings on transaction costs (Chatterjee, 2010). With the new integrated channel business model, retailers should maintain the benefits of using multiple channels and balance their price-setting strategy across channels and with competitors' prices. Hence, with increased competition among companies, retailers tend to use the strategy of repeating price promotions through the year together with aligning channel integration to keep their customers.

The current research finds a gap in the literature regarding when the retailer applies a high level of channel integration consumers are less likely to notice price differentiation. High channel integration reduces risk in the purchase transaction and influences purchase intention due to the cognitive bias of heuristic decisions, especially when consumers face sales promotions. The next chapters will show how the thesis examines its hypotheses in two studies.

Chapter Four: Methodology

4.1. Introduction

Chapter Two proposed just noticeable difference theory and prospect theory as theoretical foundations for this thesis. It put forward important hypotheses to answer the thesis's research questions. The importance of setting optimal prices in different channels leads the thesis to attempt to determine the price thresholds beyond which consumers are more likely to notice price differentiation between online and offline channels by the same retailer and the price stimuli that influence just noticeable differences.

Although many consumers accept different price strategies between online and offline channels for the same retailer, some consumers find price differentiation unfair (Fernandes & Calamote, 2016). With increased competition and the development of communication technology, many retailers have improved their services to integrate their online and offline channels. In order to achieve the research objectives and answer the research questions set out in Chapter One, more than one experimental study appear to be necessary. Two studies have been conducted in order to gain more insights into how consumers perceive price differentiation. Study 1 identifies the price thresholds at which price differences are noticed between the online and offline channels and investigates hypotheses *H1* to *H4*. Based on the results of study 1, further hypotheses (*H5* to *H9*) are tested in study 2 to understand the cues leading consumers to notice price differentiation more beyond particular price thresholds and the consequences of noticing price differentiation.

The purpose of this methodology chapter is to discuss why a specific philosophy rather than other philosophies has been chosen, to describe the research strategy and introduce the instruments used to achieve the goals of the thesis. With the research objectives and approach in mind, the first section of this chapter will provide an introduction to the research philosophy

and the most suitable research paradigms. Afterwards, the chapter will explain the research instruments used to achieve the research goals, including the research procedure and sampling method. The final part of the chapter presents the data analysis of the first study and discusses the results.

4.2. Rationale for the Choice of Approach

No methodology is better than others but the choice depends on the nature of the research. It is appropriate for this study to draw on primary data derived from multiple experiments since the research is concerned with noticeable price differences in various situations. By selecting a positivist approach, it is possible to understand consumers' perceptions and pay close attention to how they perceive price and its relationship with related variables. Simultaneously, this study is concerned with demonstrating generalizable trends over time in measurable objective phenomena. Therefore, a deep analysis of quantitative data from two experiments will allow the current research to achieve a rich understanding of consumer behaviour.

4.3. Research Philosophy

The reason for classifications of philosophical research is to enable discussion of the implications of the research philosophy and why the research has chosen a specific method. In other words, a research philosophy is a belief about the way in which data about a phenomenon should be collected, analysed and used.

Many researchers have categorized research philosophy paradigms into two main domains: positivism and interpretivism (e.g., Davison & Martinsons, 2011; Hudson & Ozanne, 1988; Mackenzie & Knipe, 2006; Wahyuni, 2012). Research paradigms establish the basic beliefs underlying the main domains of pieces of research: ontological, epistemological and methodological assumptions (Guba & Lincoln, 1994, p. 107). The following section will

discuss positivist and interpretivist research philosophies. This will be followed by discussion of the three basic beliefs in research paradigms.

4.3.1. Positivism

Positivism is logically connected to pure scientific laws to prove falsifiability, relative explanatory power, logical consistency and survival (Kura & Sulaiman, 2012; Lee, 1991). The aim of positivist approach is to test a theory or describe an experience in order to observe, measure or predict forces surrounding us so the social world – which has no values to measure and explain phenomena that have a causal nature – can be studied in a similar manner to the natural world (Mackenzie & Knipe, 2006; O’leary, 2004, p. 5).

Prior studies have argued that positivist research is a “systematic and methodological process” (Koch & Harrington, 1998; Kura & Sulaiman, 2012; Walker, 2005) that concentrates on objectivism, rationality, prediction and control (Streubert & Carpenter, 2011, p. 7). Positivists believe that reality is stable and can therefore be described from an objective viewpoint (Levin, 2008). Hence, positivism can be described as an approach to filling gaps in the knowledge of specific phenomena in an objective way.

Kura and Sulaiman (2012) state that positivism is rooted in quantification. Quantification refers to using mathematical tools to measure a social phenomenon with numbers and frequencies. Predictions can be made on the basis of previous observations which explain realities and their inter-relationships. Therefore, positivism entails that observations should be repeatable. According to Hirschheim (1985, p. 12), "Positivism has a long and rich historical tradition. It is so embedded in our society that knowledge claims not grounded in positivist thought are simply dismissed as a scientific and therefore invalid."

4.3.2. Interpretivism

Interpretivist approaches include phenomenological sociology, philosophical hermeneutics and constructionist perspectives. Interpretivists examine a text to discover embedded meanings to understand actions and behaviours (Kura & Sulaiman, 2012).

Interpretive approaches tend to rely on the opinions of participants, which depend on their backgrounds and experiences in a situation. Interpretivists do not begin with theory but use inductive methods to develop a theory in the research process (Creswell, 2003, p. 8; Mackenzie & Knipe, 2006). Kura and Sulaiman (2012) state that interpretivism interprets the world through the logic of a situation rather than the laws of social reality. In interpretivism, deep meaning is obtained through understanding reality through the details of specific situations and experiences (Kura & Sulaiman, 2012).

A weakness of interpretivist approaches is that they may not provide enough data for generalisations. However, they are able to establish the existence of a phenomenon by providing quantitative details that are required to reach research goals (Kura & Sulaiman, 2012). Hence, interpretivism is a subjective method to solve a problem.

4.3.3. The Nature of Research Paradigms

The following will give an overview of the three research paradigms mentioned previously: ontological, epistemological and methodological assumptions.

Ontology

Ritchie, Lewis, Nicholls, and Ormston (2013, p. 4) state that the ontology “is concerned with the nature of reality and what there is to know about the world.” Critical ontological questions include whether social reality exists independently of human interpretation, whether social reality is commonly shared or separate and whether social behaviour is governed by laws that can be generalized (Kura & Sulaiman, 2012).

Wahyuni (2012) argues that ontology can be subjective or objective. In objective ontology, reality is perceived to exist as an independent external social actor (Neuman, 2013; Saunders et al., 2009). Guba and Lincoln (1994) state that positivism is rooted in the ontological assumption of objective reality. In contrast, subjective ontology depends on the theory that individuals contribute to social phenomena (Wahyuni, 2012).

To relate this to the two main domains of research philosophy, ontology can be explained as knowing about the world or a belief about reality. In a positivist approach there is a single reality. In contrast, in an interpretivist approach there is no single reality.

Epistemology

The most important concern of epistemology is understanding social reality in order to take action and identify how to study (Kura & Sulaiman, 2012). The term epistemology refers to "what [is] known to be true" (Hirschheim, 1985). Epistemology can explain how to get knowledge and perceive the nature of things that exist. Wahyuni (2012) writes that epistemology is a "view on what constitutes acceptable knowledge." Epistemology differs from doxology, which refers to "what [is] believed to be true" (Hirschheim, 1985). Hence there is a process of transforming phenomena from doxa to episteme.

In addition, whether a researcher can establish relationships and observe social phenomena through direct observation is an epistemological issue (Kura & Sulaiman, 2012). To relate this to the two main domains of research philosophy, positivism is coherent and consists of external reality that can be measured using statistics. This is known as objective epistemology. On the other hand, interpretivism involves interpretation of external reality. This is known as subjectivist epistemology.

4.4. Methodology

Methodology refers to how to get data to know the reality. In general, there are two methodological choices: quantitative and qualitative. The choice between these two methodologies depends on the nature of the research and the reality discovered by other studies. Based on the above discussion, the appropriate approach selected in this thesis is positivist with the collection of quantitative data.

4.4.1. Experimental Method

An experimental method allows researchers to manipulate factors or stimulate thought to influence behaviour while holding other factors constant. The just noticeable difference concept mentioned earlier is that there is a relationship between the specific magnitude of a stimulus and the amount that needs to be added to perceive that the magnitude has changed. This is the minimum amount of stimulus intensity required to cause a change (Cheng & Monroe, 2013a).

In this research, the just noticeable difference happens when a consumer perceives two different prices for the same product (see Monroe, 1973). This research uses survey-based experiments to achieve their goals. A survey enables the researcher to obtain data about situations or views at one point in time through questionnaires. Prior research measuring price differentiations employs experimental studies (e.g., Bamford et al., 1988; Hannak et al., 2014; Lockshin et al., 2006; Monroe, 1971). The current research involves multiple experiments. Prices are manipulated to determine whether (or not) noticing price differentiation differs in different channels for the same retailer, and under which conditions consumers will be more or less likely to notice price differentiation. In the following subsections illustrate the overall research framework, a product category that used in this research, the baseline of price setting, and the details of how this research collected the data.

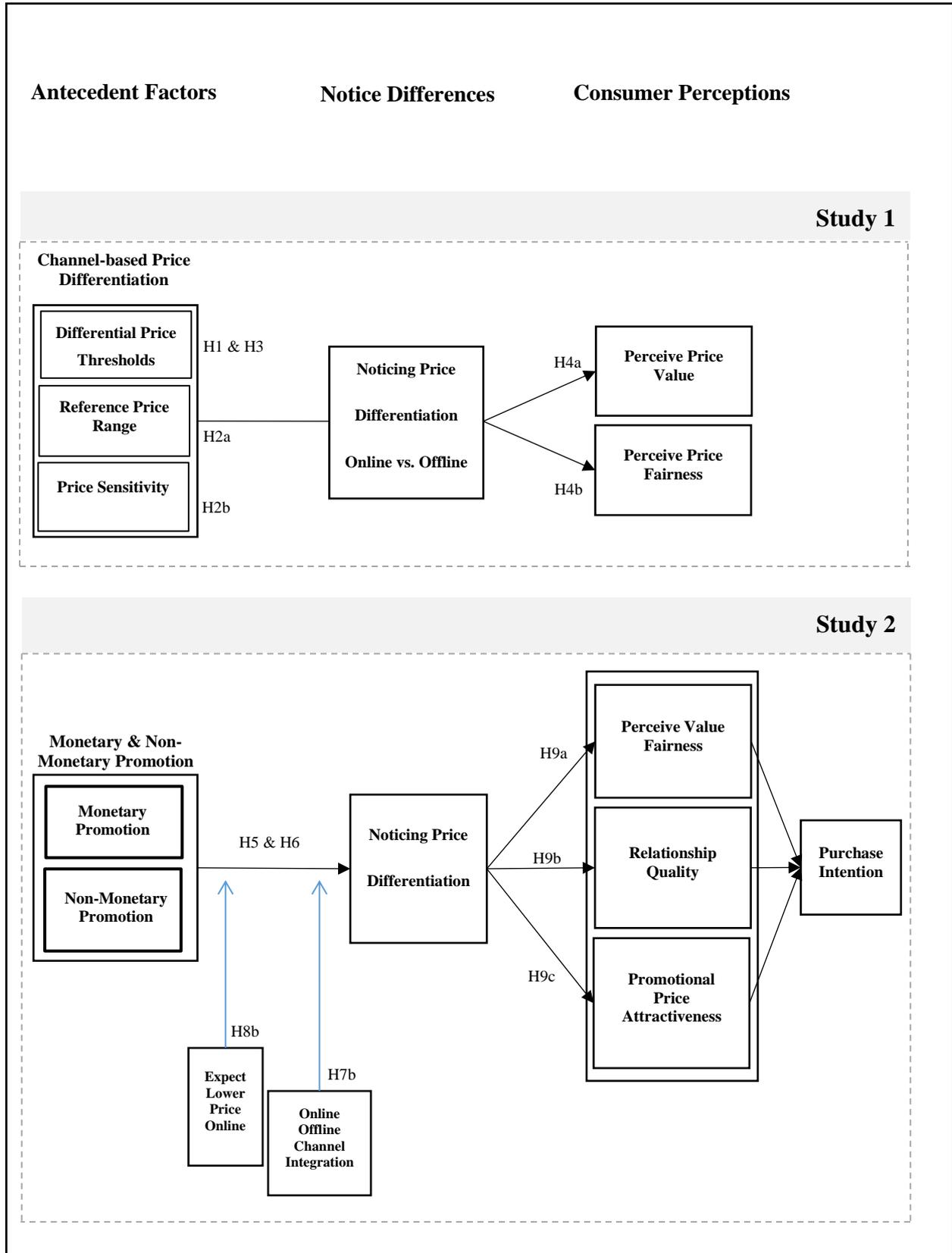
4.4.2. Overall Research Framework

The main purpose of this thesis to investigate at each level/threshold of price differential how consumers notice price differentiation between online and offline channels. Also, investigating different conditions of price presentation formats regarding noticing price differentiation. The high level of price thresholds that consumer more likely to notice price differences will study further conditions of price presentation format that consumer is more/less likely to notice price differentiation.

Therefore, there is a need to investigate the different price thresholds between online and offline channels at which consumers are more likely to notice price differentiation. Hence, the first study identifies the high price level at which consumers notice the price in the online channel is significantly different to that in the offline channel. Also, this thesis needs to investigate the differential price thresholds of different conditions include the regular and promotional price.

The second study relies on high level of differential price thresholds based on the results of study 1 to examine the different price formats at which make it more/less likely that price differentiation will be noticed. The two studies in this thesis use the same product category and the same initial price as the baseline price. However, the conditions and scenarios are different. The following figure 4-1 is the summary of the research framework of both studies in this thesis where the study 1 investigates the (*H1-H4*) and study 2 investigate (*H5-H9*).

Figure 4-1: Summary of the Research Framework



Each study of this thesis investigates important factors that cause the noticing price differentiation which includes the differential price thresholds, price presentation and promotional formats. The thesis also investigates the outcomes of noticing price differentiation. The below table 4-1 summarises the measurement of the variables that will use in both studies which include noticing price differentiation, price sensitivity, reference price range, the expectation of lower price online, purchase intention, channel integration, and other factors related with consumer perceptions. The details of these variables will illustrate in the following chapters as the measurement of each study.

Table 4-1: Summary of Measurements

Variables	Items	Scale	Reference
Noticing price differentiation	1-item	Ys/ No	(Weber, 1834)
Price sensitivity	6-items	(agree/disagree) (important/not important)	(Wakefield & Inman, 2003) (Kujala & Johnson, 1993)
Reference price rang	2-items	High/Low range	(Ancarani & Shankar, 2004; Brynjolfsson & Smith, 2000; Pan et al., 2004)
Purchase intention	4-items	(agree/disagree)	(Fassnacht & Unterhuber, 2016)
Expectation of lower price online (ELPO)	5-items	(agree/disagree)	(Konus et al., 2008; Levin et al., 2003; Urbany et al., 1996; Yaraş et al., 2017)
Channel integration	3-items	(agree/disagree)	(Binder, 2013, p. 275; Herhausen et al., 2015)
Perceived price fairness	3-items	(agree/disagree)	(Bolton et al., 2003, 2010; Vogel & Paul, 2015; Xia et al., 2004)
Perceive price value	7-items	(agree/disagree)	(Dodds et al., 1991; Johnson et al., 2006; Vogel & Paul, 2015)
Relationship quality	8-items	(agree/disagree)	(Fitzsimons, 2000; Tax et al., 1998; Vogel & Paul, 2015; Zhang et al., 2018)
Promotional price attractiveness	3-items	(agree/disagree)	(Cheema & Patrick, 2008)

4.4.3. Product Category

The thesis uses a plain white shirt as the product when collecting data. Plain white shirts are purchased by both males and females, and to avoid social bias the colour white is used. Similar products are studied in terms of their importance to consumers and suitability for a variety of occasions.

Consumers' channel preferences depend on the type of product. Many consumers use both online and offline channels for shopping. The above product category is selected for the experiments for several reasons. One of the most important of these is that it is bought in both online and offline stores. For instance, Fassnacht and Unterhuber (2016) use clothing (a white t-shirt) in their study because it is important in online shopping (Statista, 2015). Additionally, they use a plain white t-shirt because it is suitable for both genders (Fassnacht & Unterhuber, 2016). The following explains why the fashion industry is the most suitable for the current thesis.

Previous studies have focused on fashion categories. Blázquez states that clothing shopping has grown fast in UK online shopping (Blázquez, 2014). Nielsen (2016) reports that shopping online is growing. There are differences between buying durable goods and consumables in the online channel. The top category of online purchases is clothes. According to Nielsen, 55% of people have purchased fashion products online, followed by books/music/stationery (50%) and travel products/services (49%). Online product categories differ from one region to another (Nielsen, 2016). According to Nielsen (2017), more than half of global respondents have purchased fashion products online (58%). Fashion products is the top category purchased online in different regions such as China (72%), India (68%), Germany (68%), South Korea (67%) and Austria (66%) (Nielsen, 2017).

Nielsen's (2017) report shows that fashion products have been bought by 41% of people in both channels (online and offline). Another category bought equally online and offline is consumer electronics (43%). Consumer electronics are not in the top rank for buying online (40%) compared to fashion products (58%). Nielson (2017) also states that consumer electronics (42%) and fashion (49%) are the most common categories for which consumers seek information to make purchasing decisions.

A PWC report provides the percentages of consumer preferences for shopping online and offline for the two categories. 43% of consumers shop for electronics online and 51% offline. These figures are similar to those for clothes: 40% online and 51% offline (PWC, 2017).

4.4.4. Baseline Price Setting

When designing study 1 in 2018 the present researcher considered the most popular multi-channel retailers in the UK which sell own-brand items in both online and offline channels. The average prices of products for men and women at retailers which provide items for both genders were balanced. The prices of items were collected separately for both genders in the 10 most popular retailers. The result was that the average price which is used as a baseline is £24 for a shirt.

Additionally, when setting prices in each scenario, to make the prices more realistic 12 shirts were selected randomly from the 10 most popular retailers. The retailers have different levels of prices for each category, i.e., retailer X sells different shirts at different prices (£18, £21, £23, £26, £30). Therefore, three different prices for different designs are employed in each scenario, based on the average of the prices in the most popular retailers. The top and bottom prices are £4 ($\pm 15\%$) from the average baseline price (£24), so the three prices that appeared to participants are £20, £24, and £28 (see the [Appendix](#), p. 263 for details).

Psychophysics has long studied the problem of measuring an individual's response thresholds to physical stimuli (Monroe, 1971a). Fassnacht and Unterhuber (2016) and Uhl and Brown (1971) use three levels of prices (5%, 10%, and 15%). Another study investigating consumer perceptions of price increases uses three price thresholds to measure fairness (Bolton et al., 2003). However, in this thesis 5%, 10%, and 20% price increases are manipulated in both the online and offline channels in the scenarios. The reasons for using 20% rather than 15% in this thesis are as follows.

The first reason for not using a 15% price increase is that it results in duplicating the numbers in the prices on the baseline page and the manipulated page. This would mean that the baseline prices of the 12 different shirts on the same page match the prices of some items on the manipulation page. The second reason is that a previous study on noticing price differentiation argues that at least 20% of the old price/original price has to be discounted to be recognisable (Britt, 1975). This thesis argues that if a discount needs to be 20% to be noticeable, a price increase of 20% might be needed to be noticeable. Third, the thesis aims to examine a higher level of differential price thresholds than previous studies which only study 15%. Recent research by Vastani and Monroe (2019) demonstrates that when a price increase is more than 15% the response of consumers to the price differentiation is more negative and when the price is decreased by 23% the response is more positive (Vastani & Monroe, 2019). Hence, this thesis investigates whether 20% price differentiation between online and offline channels differs in terms of consumer perceptions, thus providing a further examination of differential price thresholds to enable retailers to maximise their profits using prices acceptable to consumers.

Moreover, retailers present prices in different forms. Some use the end digit numbers .99 or .95. Others use the normal format (.00) or just the basic format (e.g., £15). This study aims to make the price as simple as possible by concentrating on change rather than on presentation. Therefore, the normal format is used with prices ending with .00 (e.g., £24.00).

4.4.5. Data Collection

The experiments surveys designed using the platform of Qualtrics Surveys due to the need to set up the survey in a proper way and use its tools such as the bridge in survey blocks/sections for instance, when determining the gender the survey will display the male or female section to be more realistic in the experiment.

The thesis collected the data via an online platform which is called Prolific as online participant recruitment for surveys which give both studies honest participants and accurate results because the experiments are done with several groups. Each experiment can get new participants and not allow them to make another experiment. This beside other features of eligibility of the participants in the platform such as shopping online for clothes and UK residences.

This thesis collected the data online for both scenarios of online and offline because want to make sure participants in both scenarios concentrate on the imagination scenarios to avoid the distraction of physical store. However, the presenting of the products and shopping details for both conditions are different. For instance, in the online scenarios, it designed the page as a real shopping website include page numbers, categories, and all products set on one page of total 12. However, in the offline scenarios has removed the information and details of the online shopping as mentioned above, and the way of presenting the product divided to three products in each line because in the real physical shopping practice consumers can see and compare between three different models of products in the same time, see the appendix pg. (263).

4.5. Chapter Summary

Chapter Four has discussed the rational choice of research philosophy, with positivism and an experimental method being chosen. The experimental study has provided useful insights into

differential price thresholds in the online and offline channels for the same retailer. The method of analysis section explained that a qualitative approach with an experimental study can be used to investigate different conditions that influence noticeable price differentiation.

Moreover, this chapter has discussed the overall research framework which illustrates how the two studies of this thesis connected. It has determined the baseline price, product category and variables that will use in this research. Finally, it explained why this research collected the data online for both scenarios rather than collecting in physical stores.

Chapter Five: Study 1

Differential Price Thresholds in Multi-Channel Retailers

5.1. Introduction

The purpose of this chapter to explain how this research design the experiment in detail and how developed the scenarios. Study 1 conducted to identify the high level of differential price thresholds between online and offline channels. In this chapter will explain how the first study in this thesis is designed in terms of procedures, measurements and sample size. This will be followed by analysis of the data and a discussion of the results.

The data analysis of study 1 shows the sample descriptions, manipulation check, data reliability and validity. Follow by the results of how participants notice price differentiation of each condition. The results also illustrate how participants perceive the price value and fairness when they notice the price differentiation of each channel.

5.2. Experimental Design

The general experimental design of study 1 is to control channels (online and offline) and manipulate prices. The research framework relies on the second degree of price-setting in channel-based price differentiation as mentioned in Chapter Two. The study seeks to investigate differential price thresholds at which consumers notice the price in the online channel is significantly different to that in the offline channel. The thesis argues that different price presentation formats influence consumers noticing differentiation more or less as in the prospect theory of loss and gain situations (Kahneman & Tversky, 1979). Therefore, in study 1 multiple scenarios are used as follows: 2 retail channels (online/offline), 3 price thresholds (5%, 10%, and 20%) and 2 price presentation formats (promotional price/non-promotional price). Hence, there are 12 groups.

Study 1 manipulates prices in the offline and online channels to measure noticeable price differentiation at various levels by increasing the price of one product at the same retailer. The study investigates the antecedent factors that influence noticeable price differentiation: three price thresholds and promotional price presentation. It also examines price sensitivity and the reference price range in different channels for the same retailer. Furthermore, it examines consumers' perceptions when noticing price differentiation in terms of perceived price fairness and value in the online and offline channels.

An aim of this study is to compare the differential price thresholds of one level of price increase in each scenario between online and offline groups for the same retailer. A second aim is to compare the reference price range and price sensitivity between the online and offline channels to investigate whether the two variables in the different channels are the same or different. A third aim is to compare noticing price differentiation in multiple channels under the conditions of the promotional price and the regular price. Finally, the study aims to compare how consumers perceive price value and fairness between the online and offline channels when noticing price differentiation.

5.3. Sample Size

Study 1 collected data for 12 groups. Each group had 60 participants, making a total of 720 participants. This number seems sufficient to be able to generalize the results. In a previous study, VanVoorhis and Morgan (2007) discuss the minimum number of participants needed to maintain adequate power to detect differences. They state the number should be no fewer than 50 participants. In an early study, Cohen (1988) states that using 30 participants should lead to 80% of the power.

Furthermore, previous studies have used samples with less than 700 participants. For instance, the study of price differentiation by Vogel and Paul (2015) uses 641 respondents. A

study of fairness perceptions of pricing strategies in multi-channel retailing uses 487 participants (Nagel, 2016). Researchers have studied consumer responses to price differentiation both online and offline collecting data from 298 participants. This study was about the fairness of price differences for a plain white t-shirt (Fassnacht & Unterhuber, 2016).

5.4. Procedures

This research investigates shopping at multiple-channel retailers so it is very important to make sure the respondents are multi-channel users and have lived in the UK because the price is expressed in pounds (£), so respondents need to know how much a pound is worth. It is not possible to say that all the consumers have used a physical store to purchase clothes because it might be that some have used a catalogue or other online methods. A study by Melis et al. (2015) shows that most online grocery shoppers visit online and offline channels regularly. In addition, Breugelmans and Campo (2016) notice that there is a rapid growth in the numbers of consumers who use multiple channels. Therefore, at the beginning of the survey, the participants were asked questions in order to filter those eligible to participate in the study.

The study presented participants with two pages to manipulate prices to measure noticeable price differentiation for 12 different shirts and prices to avoid recall price bias. This is because many researchers agree that the logical number of items is plus seven or minus two (e.g., Miller, 1956, 1994; Saaty & Ozdemir, 2003; Shiffrin & Nosofsky, 1994). The study separated the price questions using two non-price questions. The first page in the experimental survey appeared for only 60 seconds because the study wants respondents to look at prices rather than memorise them. A study has shown that people need around 20 seconds to engage visual memory (Phillips, 1974). The first page showed the baseline prices and the second page the increased prices. The respondents were then asked further questions to measure other aspects of consumer perceptions of prices.

Participants were told that they were in their favourite store and they were shopping for a shirt either online or offline. Many researchers use multiple scenarios of imagination shopping to conduct their studies (e.g. Fassnacht & Unterhuber, 2016; Lambert, 1978). In addition, a bridge depending on gender was created. For example, if a participant selected male gender, only pages with male shirts were shown. This is because the aim was to use real scenarios for success in the research experiment and to avoid social bias.

5.5. Measurement

To measure noticeable price differentiation, the study directly measured whether the respondents noticed any price difference or not. It used a similar technique to that of Weber, (1834) to measure just noticeable difference in weight, sound, etc. Weber used two objects and increased the amount of one object and kept the other unchanged. He succeeded in measuring the different thresholds of just noticeable difference (Dehaene, 2003, p.146). Fechner also conducted many experiments to measure differential thresholds in relation to price (Cheng & Monroe, 2013a).

Price sensitivity was measured using six items which combine the importance of price when shopping between channels as a decision-making factor and self-perceptions of price sensitivity due to the different advantages of online and offline. The Three items of self-perceptions of price sensitivity came from Wakefield and Inman (2003) but were rephrased to fit the research design. These were: “I am willing to make an extra effort to buy low price items ...”; “I will change what I planned on buying in order to take advantage of a lower price for ...”; “I am sensitive to the price change in ...”. The three items of the importance of price when consumers shopping in different channels were borrowed from Kujala and Johnson (1993). They asked about the importance of price for consumers to measure price sensitivity. When rephrased to fit the current research they were: “The price I notice in a store is very important to my choices”; “I often choose a product on the basis of the price offer while shopping”; “I

often check the price of a shirt while buying.” Thus, the study used six items to measure price sensitivity.

Most researchers use two items to measure the reference price range. They ask “What would be the highest (lowest) price you are willing to pay for this product?” (Lowe & Alpert, 2007). Many studies measure whether expected prices are high or low level by determining the price range (e.g., Ancarani & Shankar, 2004; Brynjolfsson & Smith, 2000; Pan, Ratchford, & Shankar, 2004).

In addition, the study measured important aspects of consumer perception. First, perceived price fairness was measured using three items which have been used by many researchers (Bolton et al., 2010, 2003; Vogel & Paul, 2015; Xia et al., 2004). The rephrased three items were "The price of the shirt is fair"; "The price of the shirt is justifiable"; "The price of the shirt is reasonable." Perceived price value was measured with a scale of seven items developed and refined in other studies (Dodds et al., 1991; Johnson et al., 2006; Vogel & Paul, 2015). The adjusted items were "The shirt price is at a good level"; "The shirt price is a good deal relative to other offers available on the market"; "The shirt price is great value"; "At the price shown, the shirt is a very economical"; "The shirt is considered to be a good buy"; "The price shown for the product is very acceptable" and "This shirt appears to be a bargain."

There is controversy around determining the optimal number of scale points – whether it ought to be 5 or 7 (Croasmun & Ostrom, 2011). It has been found there are no differences between 5- and 7-point scales regarding the mean when the same items are tested twice (Dawes, 2008). Therefore, in study 1 5-point Likert scales were used to balance the survey shape and reduce the frustration level of respondents.

5.6. Pretest

It pre-tested the experiment of four groups to see whether participants perceive the experiments differ in terms of notice price differences and the reliability of other factors that will measure in the actual study. The four groups are 2 (promotion/ regular price) X 2 (increased '10%' / No change in prices). It manipulated prices in two groups (increased '10%' / No change in prices) to make sure the scale of measure noticing price differentiation is valid. Also, it applies two conditions between groups which are promotion and regular price in noticing price differentiation.

The total number of participants 49 between groups. By using T-test the condition of (increased '10%' / No change in prices illustrated that the result found there are significant differences in noticing price differentiation between the group of increase and no change price, $p < .001$. This means the measure of noticing price differences is succeeded to measure its purpose in this design. However, the difference between the regular price and promotional price are not significant differences, $p = .308$ due to participants did not reach their differential price thresholds at this level, which in the actual study will investigate the lower and higher price thresholds. Furthermore, the Cronbach alpha reliability of six items of price sensitivity is .825. Perceive price value of seven items is .914 and perceive price fairness of the three items is .879. Hence, the measures are reliable and valid to conduct the actual study.

5.7. Manipulation of the Independent Variables

The manipulation check used one item to measure three price levels differently in each channel. Respondents were asked to what the extent they were willing to accept the price. Later, the results for different scenarios based on different channels were combined and compared. Monroe (1971) develops a measurement of price thresholds which is 1 item Likert scale as follows: most acceptable; acceptably low; acceptably high; unacceptably low; unacceptably

high. The manipulation check determined how respondents perceived different price thresholds in each channel.

5.8. Study 1: Data Analysis

5.8.1. Sample Description

This study collected data from 720 participants in a total of 12 groups with each group having 60 participants. The 12 scenarios employed 2 retail channels (online/offline), 3 price thresholds (5%; 10%; 20%) and 2 price formats (promotional price/non-promotional price). As Table 5-1 shows, 74.2% of the respondents were female and 25.8% male. More than half of the respondents were aged between 18 and 35. The average net monthly income of 49% of the respondents was between £1000 and £2000. Finally, the frequency of clothes shopping for 54.7% of the sample was monthly.

Table 5-1: Sample Characteristics

Gender	Male	25.8%
	Female	74.2%
Age	18 - 35	56%
	36 - 50	32.9%
	≤ 51	11.1%
Net Income	Less than £1000	30.8%
	£1000 - £2000	49%
	< £ 2000	20.2%
Shopping Frequency	Weekly	5.7%
	Monthly	54.7%
	Every three month	27.9%
	Less often	11.7%

5.8.2. Manipulation Check

A manipulation check evaluated the price set in different channels in each scenario. It checked whether the participants perceived the three price levels differently. The participants were asked how they would evaluate the current price of the plain white shirt. It used the ANOVA test for the online and offline scenarios as separate sets of data.

In the online scenarios, there were statistically significant differences in evaluating the price at the three price levels, $p = .049$. For the offline scenarios the ANOVA test found that there were statistically significant differences in evaluating the price at the three levels, $p < .001$. The ANOVA test for all the samples combining the online and offline scenarios found statistically significant differences in evaluating the three price levels, $p < .001$. Hence, the manipulation check revealed that the respondents perceived the scenarios differently.

5.8.3. Data Reliability and Validity

Reliability and validity are important concepts in research. Reliability is the stability of measurements under a variety of conditions. Basically, the same results should be obtained every time. Reliability means a consistency of measurements when repeating them on different occasions, for different persons or with alternative instruments to measure the same thing (Drost, 2011). In sum, reliability is consistency of measurement (Bollen, 1989).

A reliability score indicates the degree that the scores in a sample are free from random measurement errors (Kline, 2015). Researchers often use Cronbach's alpha coefficient to check reliability. A score of 0.7 suggests acceptable internal consistency (Nunnally, 1978) and a score of 0.8 is considered to be preferable (Clark & Watson, 1995).

Validity is the extent to which the instruments used to measure what they are purported to measure (Hair et al., 2006). There are two types of validity: face validity and construct validity. Face validity indicates the extent to which the content of the item conforms to the

definition of the variable measured (Gravetter & Forzano, 2018) and construct validity is tested using correlation analysis to indicate the extent to which a scale actually measures the item that it is supposed to measure (Hair et al., 2006).

The validity and reliability of the items in this study were tested using Cronbach's alpha. First, the Cronbach's alpha for the six items used to measure price sensitivity was .842 and all the items correlated and were significant at the .001 level.

Second, the Cronbach's alpha for the three items measuring price fairness was .933, indicating that they were reliable and valid. They were significantly correlated at the .001 significance level.

Third, the Cronbach's alpha for the 7 items measuring price value was .950. The 7 items were computed as one variable to make them comparable between the online and offline channels. All the items for each factor were also computed to make them comparable.

5.9. Results

5.9.1. Differential Price Thresholds in Online and Offline Channels

The study compared noticing price differentiation in the online and offline channels for all the data. It also investigated the differential price thresholds in the channels independently. Finally, it studied how participants notice price differentiation at the three price thresholds online and offline. Therefore, this section will examine the following hypothesis. *H1: Consumers are more likely to notice a price difference offline than online for the same retailer when the price changes.*

Noticing Price Differentiation Online vs. Offline in General

Chi-square tests were used because the data are categorical (0,1). Table 5-2 shows the results for noticing price differentiation online and offline for the three price thresholds. There are no statistically significant differences in noticing price differentiation between the online and

offline channels in general, $p = .160$. The descriptive data show that the participants were more likely to notice price differentiation in the offline channel (78.6%) than in the online channel (74.2%), although this is not statistically significant. The next part will examine the difference between the three price thresholds in the online and offline channels separately.

Noticing Price Differentiation Online and Offline Separately for Each Price Threshold

Table 5-2 also shows the results for noticing price differentiation of the three price thresholds (5%; 10%; 20%) in the online and offline channels separately. In the offline channel, there are statistically significant differences between the three price thresholds, $p = .012$, but in the online channel there are no statistically significant differences in noticing price differentiation between the three price thresholds, $p = .568$. This is because participants were more likely to notice when the price increased by 20% offline (87.5%) than online (76.7%). The following section will report the extent to which participants noticed price differentiation at each level without comparing the online and offline channels.

Comparing Noticing Price Differentiation for Each Price level

The crosstabs in SPSS was used to examine noticing differentiation at the three price thresholds. The descriptive data in Table 5-2 show price differentiation was noticed by 73.3% of the participants when the original price was increased by 5%, by 73.8% when the increase was 10% and by 82.1% when it was 20%. The chi-squared test showed that there is a statistically significant difference, $p = .039$. At the price threshold of 20% consumers were more likely to notice price differentiation than at price thresholds of 5% and 10%. In the following, a post hoc analysis deeply investigates the differences among the price thresholds through multiple comparisons.

The post hoc analysis of the three price thresholds investigated when respondents are more likely to notice price differentiation. The Pearson chi-squared test showed that there is a

statistically significant difference in the noticeable price difference for the three price thresholds, $p = .039$.

Table 5-3 shows that there are only significant differences between the three price thresholds when the increase is 20% but there are no statistically significant differences between the price threshold when the increase is 5% or 10%.

Table 5-2: Differential Price Thresholds in Different Channels

Noticing Price Differentiation		Online vs. Offline		Price Thresholds			Price Thresholds					
							Online-Only			Offline-Only		
		All Online	All Offline	5%	10%	20%	5%	10%	20%	5%	10%	20%
Yes	Count	267	283	176	177	197	85	90	92	91	87	105
	%	74.2%	78.6%	73.3%	73.8%	82.1%	70.8%	75.0%	76.7%	75.8%	72.5%	87.5%
No	Count	93	77	64	63	43	35	30	28	29	33	15
	%	25.8%	21.4%	26.7%	26.3%	17.9%	29.2%	25.0%	23.3%	24.2%	27.5%	12.5%
Total Sample		360	360	240	240	240	120	120	120	120	120	120
Sig.		(.160)		(.039)			(.568)			(.012)		

This table compares noticing price differentiation between the online and offline channels for all price thresholds. It compares the online and offline channels for all price thresholds.

Table 5-3: Post Hoc

Price Threshold	Multiple Comparisons	Sig.
5%	10%	.914
	20%	.024
10%	5%	.914
	20%	.032
20%	5%	.024
	10%	.032

In conclusion, the thesis assumed that there are significant differences between price thresholds in the online and offline channels in terms of noticing price differentiation. Hypothesis *H1* is accepted as there is a statistically significant difference between the online and offline channels for the same retailer at the price threshold of 20%.

5.9.2. Reference Price Range and Price Sensitivity in Multiple Channels

The Reference Price Range in Multiple Channels

In the experiment, the respondents were asked what price they were willing to pay for a plain white shirt. This was to reflect their reference price range in order to examine the following hypothesis. *H2a: Consumers have a narrower reference price range in the online channel than in the offline channel for the same retailer.*

The respondents were asked to give both the lowest and highest prices they would pay for a shirt. The results show the reference price range in the groups for all the online and offline scenarios was from £10.86 (*SD* = 8.56) to £24.47 (*SD* = 11.62). They were also asked how

much they would normally pay for a plain white shirt in order to determine the reference price point. The result was a reference price point at £17.77 ($SD = 7.78$). To sum up, the reference price range was from £11 to £24 and the average the respondents would normally pay for a plain white shirt was £18 ± £8. In the following, Table 5-4 shows the distance of the upper and lower price range.

Table 5-4: Distance of the Price Range

Distance Price Range	Frequency	%
≥ 5	124	17.2
6 - 10	213	29.6
11 - 15	163	22.6
16 - 20	110	15.3
≤ 21	110	15.3
Total	720	100.0

An independent T-test of the comparison between the online and offline channels for the same retailer shows that the distance of the online price range is ($M = 2.73$, $SD = 1.29$) and the distance of the offline price range is ($M = 2.91$, $SD = 1.32$). Hence, there is no statistically significant difference, $p = .938$. Therefore, hypothesis *H2a* is not accepted.

Price Sensitivity in Multiple Channels

Regarding price sensitivity, the following hypothesis was assumed. *H2b: Consumers are more price sensitive in online channels than in offline channels for the same retailer.* An independent T-test of price sensitivity between the online and offline channels shows that there is a statistically significant difference in price sensitivity between the online and offline channels

for the same retailer, with ($M = 3.99$, $SD = .607$) for the online channel and ($M = 3.85$, $SD = .682$) for the offline channel ($p = .009$). Hence, hypothesis *H2b* is accepted.

5.9.3. The Noticeable Difference in Various Price Presentation Formats Online and Offline

It was assumed that respondents might notice a price difference under certain conditions (a promotional price or a non-promotional price). This was investigated in depth to test the following hypothesis. *H3: For the same price increase, with a non-promotional price format a consumer is more likely to notice the price difference in regular prices than promotional price format.*

This section will investigate the difference between noticing price differentiation when the price is promotional and when it is non-promotional in general. Then, it will investigate a promotional price separately in both the online and offline channels. It will also do the same for a non-promotional price. Finally, it will investigate the difference between a promotional price and a non-promotional price for the three price thresholds.

A Promotional vs. a Non-Promotional Price in General

Table 5-5 provides descriptive data on using a promotional price and a non-promotional price. An analysis using crosstabs in SPSS shows that price differentiation was more likely to be noticed when the price was non-promotional than when it was promotional. 75.3% of the participants noticed the difference when the price was promotional and 77.5% when it was non-promotional. However, the difference is not statistically significant ($p = .483$).

A Promotional Price Only in the Online and Offline Channel

The descriptive data on only using a promotional price in Table 5-5 shows that more participants (76.1%) noticed price differentiation in the offline channel than in the online channel (74.4%). However, the difference is not statistically significant ($p = .714$).

A Non-Promotional Price Only in the Online and Offline Channels

When only a non-promotional price was used, more participants noticed price differentiation in the offline channel (81.1%) than in the online channel (73.9%). However, the difference is not statistically significant.

A Promotional and a Non-Promotion Price at the Three Price Thresholds

Comparing a promotional price and a non-promotional price at the three price thresholds, it was found that with a non-promotional price there is a statistically significant difference in noticing price differentiation at the three price thresholds ($p = .010$). However, when the price was promotional there was not a statistically significant difference ($p = .526$).

A post hoc analysis investigated noticing price differentiation at the three levels of price increase. The result was that there is a statistically significant difference at the 20% level but not at the 5% and 10% levels.

Table 5-5: Noticing Differentiation in a Promotional vs. a Non-promotional Price

Noticing Price Differentiation		Promotional vs. Non-Promotional		Promotion		Non-Promotion		Price Thresholds					
		Promotional	Non-Promotion	Online	Offline	Online	Offline	Promotion			Non-Promotion		
								5%	10%	20%	5%	10%	20%
Yes	Count	271	279	134	137	133	146	86	92	93	90	85	104
	%	75.3%	77.5%	74.4%	76.1%	73.9%	81.1%	71.7%	76.7%	77.5%	75.0%	70.8%	86.7%
No	Count	89	81	46	43	47	34	34	28	27	30	35	16
	%	24.7%	22.5%	25.6%	23.9%	26.1%	18.9%	28.3%	23.3%	22.5%	25.0%	29.2%	13.3%
Total Sample		360	360	180	180	180	180	120	120	120	120	120	120
Sig.		(.483)		(.714)		(.101)		(.526)			(.010)		

This table compares noticing a price difference between when a promotional and a non-promotional price is used in both channels. It does this for all three price thresholds.

Table 5-6 shows differences between a promotional price and a non-promotional price in the different channels for all three price thresholds. The results show that there is only a statistically significant difference in the offline channel ($p = .012$) but not in the online channel ($p = .568$). In addition, when comparing the descriptive data for the offline channel only with a non-promotional price and with a promotional price at the 20% level of price increase, there is a significant difference, so the respondents noticed price differentiation in the offline channel more than in the online channel.

Table 5-6: Noticing Differentiation between Groups Under All Conditions

Channels	Conditions	Price Thresholds		
		5%	10%	20%
Online	Non-Promotional	45	40	48
		75.0%	66.7%	80.0%
	Promotional	40	50	44
		66.7%	83.3%	73.3%
Offline	Non-Promotional	45	45	56
		75.0%	75.0%	93.3%
	Promotional	46	42	49
		76.7%	70.0%	81.7%

Therefore, there are significant differences between the online and offline channels when there is a non-promotional price but not when there is promotional price. This could explain why many retailers often use a promotional format with an external reference price to hide price differentiation if there is any. Therefore, hypothesis $H3$ is accepted.

5.9.4. Consumer Perceptions of Noticing Price Differentiation

This section will investigate consumer perceptions of price fairness and value in both channels for the same retailer when noticing price differentiation.

Perceptions of Price Fairness in the Online and Offline Channels

It was assumed that price fairness differs in the different channels. This section will examine the following hypothesis. *H4a: Perceived price fairness offline is higher than in the online channel for the same retailer when prices change.*

The results of an independent sample T-test show that there are statistically significant differences in perceived price fairness between the online and offline channels ($p < .001$). The result for perceived price fairness in the online channel was $M = 2.05$ ($SD = .835$) and in the offline channel $M = 2.72$ ($SD = .994$). In addition, the result of an ANOVA test shows statistically significant differences in price fairness for the three price thresholds ($p = .011$).

Therefore, there is a statistically significant difference between consumer perceptions of price fairness online and offline, with greater price fairness being perceived offline than online. Hence, hypothesis *H4a* is accepted.

Perceptions of Price Value in the Online and Offline Channels

It was assumed that there would be statistically significant differences in perceiving price value in the different channels for the same retailer when consumers notice a price difference. This section will examine this hypothesis. *H4b: Perceived price value offline is higher than in the online channel for the same retailer when prices change.*

The results of an independent sample T-test show that there are statistically significant differences in perceiving price value between the online channel ($M = 2.41$, $SD = .828$) and the offline channel ($M = 2.43$, $SD = .924$), ($p = .018$). Moreover, an ANOVA test to investigate

price value found there are statistically significant differences in price value for the three price thresholds ($p < .001$). Therefore, hypothesis *H4b* is accepted.

5.9.5. Summary of Findings

The experimental research sample consisted of 720 participants from the UK who are multiple-channel users. Table 5-7 below summarises the significant differences regarding differential price thresholds. The results of the hypotheses are summarised in Table 5-8.

Table 5-7: Summary (P-value) of Noticing Price Differentiation

Conditions	Price Thresholds			All	Pair Comparison		
	5%	10%	20%		5% vs. 10%	5% vs. 20%	10% vs. 20%
Price Thresholds	5%	10%	20%	5% 10% 20%	5% vs. 10%	5% vs. 20%	10% vs. 20%
Online vs. Offline	.381	.659	.028*	.160	.756	.037	.271
Promotional vs. Non-Promotional Price	.559	.304	.064	.482	.756	.099	.659
Promotional-Only (Online vs. Offline)	.224	.084	.274	.713	.768	.102	.644
Non-Promotional-Only (Online vs. Offline)	1.000	.315	.031*	.100	.467	.189	.040*
Online-Only (Promotion vs. Non-Promotion)	.315	.035*	.387	.904	.467	.186	.365
Offline-Only (Promotion vs. Non-Promotion)	.831	.539	.053	.247	.768	.316	.106

(*) p-value < .05

Table 5-8: Summary of Hypotheses

Hypotheses	Approved	Sig.
<i>H1</i> : Differential price thresholds offline vs. online.	Support	$p = .028$
<i>H2a</i> : Reference price range in online vs. offline.	Not support	$p = .938$
<i>H2b</i> : Price sensitive in online vs. offline.	Support	$p = .009$
<i>H3</i> : Price formats for promotional vs. non-promotional.	Support	$p = .012$
<i>H4a</i> : Perceived price fairness in offline vs. online.	Support	$p = .001$
<i>H4b</i> : Perceived price value in offline vs. online.	Support	$p = .018$

5.10. Discussion of Study 1

The purpose of study 1 was to identify the differential price thresholds at which consumers are most likely to notice price differentiation when comparing prices between the online and offline channels. Prior studies which measure noticeable price differences identify the lower level that consumers might notice differentiation at 5% in the single channel. Study 1 has investigated the price thresholds at which it is more likely that differentiation between the online and offline channels will be noticed and has applied important conditions. The key findings have been shown in the summary table. There are no statistically significant differences in noticing price differentiation between the online and offline channels in all the samples. This is due to the three thresholds being combined. The threshold at which a price difference is noticed for one product, one retailer and two channels is 20%. This difference is statistically significant. At this price level, the respondents noticed price differentiation in the offline channel more than in the online channel.

The current research considered two levels of price thresholds as low and high differential price thresholds. It has also used control level of differential price thresholds which is 10%. When it tested 5% between online and offline, it did not get a significant difference. Then, it investigated the double percentage which is 10% but neither there are no significant differences between online and offline in noticing price differentiation. After that, it investigated the high level by increased 10% more. Hence, the 5% and 20% are the low and high level, and 10% is the control group to compare with others. A previous study on noticing price differentiation argues that at least 20% of the old price/original price has to discount to be recognisable (Britt, 1975). This study considers that if the discounted need 20% to be more noticeable, it might need 20% of a price increase to be more noticeable.

Similarly, previous studies investigated the low and high price thresholds. For example, (Inman et al., 1997) use two discount levels (5 % as low and 20 % high level) to measure deal evaluations. Also, one of study to assess price knowledge used two conditions of price series between (5% and 20%). In the first condition, the price series started with a price that was 20% below the actual price, and followed with prices that were 5% below, 5% above, and 20% above the actual price. In the second condition, the price series started with a price that was 20% higher than the actual price, and followed with prices that are 5% above, 5% below, and 20% below the actual price (Vanhuele & Drèze, 2000). Moreover, a study suggested to increase profit specially for channel integration need 20% to increase profit. It uses the (5% vs. 20%) of price increasing toward supply chain cost found the following. The 5% increase of selling price do not have a significant change in the total supply chain cost; in contrast, there is a significant difference in the 20% (Niranjan et al., 2019).

It is worth discussing some interesting facts revealed by the results for prices in the offline channel only. There is a statistically significant difference in noticing price differentiation at the three price thresholds. This is due to the nature of each channel in terms

of how the products are viewed (see the [Appendix](#), p. 263 for details). In the online channel, more products (12) are presented on the same page, making it less likely that differentiation will be noticed than if 6 products are presented. In real shopping practice there is a similar situation with more products being presented in the online channel than in the offline channel.

To be more convinced of our results on pg. 142 that participants notice price difference online only at 5% & 10% about 90 participants about 75% similarly in offline about 75% because in the experiment at (5% and 10%) the actual price increased is very small which is (£1 and £2) compare with the 20% the actual price increased is (£5) where participants more likely noticing the differentiations. However, at level 20% in online only about 77% and in offline only about 88%. Hence, we can conclude that at 15% will not be significant difference between online and offline for the same level of price increase because the possibility of getting significant difference at 15% in comparing between online and offline is weak.

A further novel finding is that when there is a non-promotional price with an increase of 20% the respondents noticed price differentiation more in the offline channel than in the online channel. These results go beyond previous reports on price presentation formats, showing that there are two important things to consider when it comes to price promotion: the type of deal and the extent of the discount (Bogomolova et al., 2015). Many researchers have studied the importance of considering price and non-price sales promotions in any marketing plan (e.g., Banerjee, 2009; Palazón & Delgado, 2009; Raghurir, 2005; Suri et al., 2000). Many researchers have also studied different consumer reactions to sales promotions and how they impact the consumer purchase decisions (Ailawadi et al., 2009; Palazón & Delgado, 2009; Isabella et al., 2012).

There is an important finding regarding the understanding of the subjective internal norms of price sensitivity and the reference price range. The results on price sensitivity between the online and offline channels at least hint that there is a statistically significant difference in

price sensitivity in different channels for the same retailer. These results are identical to those of other researchers who have confirmed that price sensitivity differs from channel to channel (Chu et al., 2008; Wolk & Ebling, 2010). In contrast, there is no statistically significant difference between the online and offline channels in the distance of the reference price range. The results suggest that the price point is inside the reference price range. This result ties well with previous studies (e.g., Dost & Geiger, 2017; Dost & Wilken, 2012; Kalyanaram & Little, 1994a; Maier et al., 2015; Schlereth et al., 2012) that show that when the price is close to the edge of the acceptable range consumers are more likely to notice price differentiation.

Regarding price fairness and value, the study has found the following findings. First, there is a statistically significant difference in perceived price fairness between the online and offline channels. However, questions remain regarding the contexts that affect whether or not consumers perceive prices to be fair (Haws & Bearden, 2006). Researchers have shown that perceived price fairness plays a main role in consumers' reactions to prices (e.g., Etzioni, 2010; Kahneman et al., 1986a, 1986b).

Many researchers agree that consumers tend to be more concerned about fairness when a price increase. They suggest that consumers dislike paying an unfair price (e.g., Campbell, 1999a; Kahneman et al., 1986a, 1986b; Martins & Monroe, 1994; Urbany, Madden, & Dickson, 1989). Mayer and Avila (2014) argue that unfair price practices not only lead to perceiving injustice but can also result in more serious situations such as strong negative emotions that can be considered as anger. This issue has been investigated in some recent studies (e.g., Campbell, 2007; Namkung & Jang, 2010; Schweitzer & Gibson, 2008). Unfairness in differential pricing may impact on a firm's reputation and competitive advantage in the long term (Fernandes & Calamote, 2016). Study 1 has found a statistically significant difference in perceiving price fairness between the online and offline channels for the same

retailer, with more consumers in the offline channel perceiving price fairness than in the online channel when noticing price differentiation.

Second, the results have demonstrated that there is a statistically significant difference in perceived price value between the online and offline channels for the same retailer. It is important to highlight the fact that perceived value differs in different channels for the same retailer due to the prospect theory of gain and loss situations in the online and offline channels. These differences are very small and difficult to observe in terms of their influence on consumer perceptions of noticing price differentiation.

5.11. Chapter Summary

This chapter has discussed the experimental design of study 1, sample size, procedures, and measurement. Follow by the results of study 1. It has been found that the price threshold at which it is most likely that participants will notice price differentiation between the online channel and the offline channel is 20%. In addition, there is a significant difference in noticing price differentiation in different channels for the same retailer between promotional and non-promotional price presentation formats.

Regarding implications for managers, the study suggests that when multi-channel retailers use a channel-based price differentiation strategy, they can increase prices in the online channel more than in the offline channel. However, when retailers give a small discount compared with a previous discount or increase prices, consumers will be less likely to notice price differentiation during a promotion (e.g., with an external reference price).

The importance of this research lies in the fact that it has determined the optimal price for multi-channel retailers. This helps them maximise their profits, and in the event of a price increase, consumers are less likely to notice price differentiation until it reaches the threshold for noticing price differentiation. The various experiments have succeeded in determining that

the price threshold at which consumers are most likely to notice price differentiation in the offline channel more than in the online channel is 20%.

Future research should examine different types of monetary and non-monetary promotions so as to have a better understanding of why with a 20% price increase participants in the promotional price format are less likely to notice price differentiation than those in the non-promotional price format. Therefore, study 2 will focus on different promotion stimuli and use the price threshold at which it is more likely that price differentiation will be noticed: 20%. Study 1 has focused on just noticeable difference theory whereas study 2 will merge just noticeable difference theory and prospect theory.

Chapter Six: Study 2

The Effects of Price Promotion Formats in Noticing Price Differentiation in Online-Offline Channel Integration

6.1. Introduction

As seen from the discussion on study 1 in the previous chapter, consumers are more likely to notice price differentiation in the online and offline channel when the price increases by 20%. A more interesting finding from study 1 is that there is a significant difference in noticing price differentiation between online and offline channels when the regular price/non-promotional price is used and a promotional price is used. Hence, to understand why with promotional price the consumers are less likely to notice price differentiation, study 1 investigated antecedent factors of perceptions of monetary and non-monetary promotional price presentation formats. This chapter will investigate the causes of this, based on prior research work on numerical recognition.

Study 1 identified a 20% price increase as the differential price threshold where consumers are more likely to notice price differentiation. Study 2 will investigate different types of price presentation formats used by multi-channel retailers (a discount price, a promotional price and a clearance price). It will examine price fairness, value and promotional price attractiveness because they are very important to understand changes in consumer behaviour and their effects on purchase intentions. The outcomes of study 2 will involve consumers responses in terms of purchase intentions.

Prospect theory explains the phenomena of perceiving loss and gain situations (Kahneman & Tversky, 1979). Study 2 extends the noticeable price difference theory to explain why consumers are more likely to notice price differentiation when the non-promotional price/regular price is used than when a promotional price is used. Prospect theory suggests that

risk influences purchase decisions. Many studies investigating consumer perceptions have used Kahneman and Tversky's (1979) prospect theory as a theoretical background.

Kahneman and Tversky (1979, 2013) explain that the framing of decision-making can influence cognitive judgments. Therefore, when consumers see a discount price, they might already feel they are in a gain situation so they will be less likely to notice price differentiation. Even if they notice price differentiation, they might feel secure because the promotion creates a gain situation.

Chapter Six will investigate how participants in different scenarios notice price differentiation. Prospect theory shows that framing effects can produce perceptions of gain or loss situations. Study 2 uses three different promotional price formats which have the same discount (was £/now £, now £ and save £). Previous studies have used 'save %' more than 'save £.' A study by Chen et al. (1998) finds 'save percentage' more effective for low-price items and 'save amount' more effective for high-price items. The current study uses fashion products and considers a high price rather than other categories (e.g., fast food goods).

This thesis argues that different types of monetary promotion have significant differences in their framing effects (was £/now £, now £ and save £). The 'was £/now £' format is perceived as a gain situation because it has an external reference price. The 'now £' promotional format is perceived as a loss situation because although the price has been reduced consumers might consider the attendant monetary sacrifice to be a loss situation. However, the 'save £' promotional format may be perceived as either a moderate gain or a moderate loss. Consumers might frame the price as a gain because they see the amount reduced but that amount may not be enough to be perceived as a good deal. Simultaneously, consumers will consider it a loss situation because of the money need to be sacrificed to purchase the product.

Seasonal and non-seasonal non-monetary promotions are considered in this thesis as they might influence the framing effect of deals as loss and gain situations. Meanwhile, various non-monetary promotions such as buy one get one free, an extra free product and discount coupons have been studied. However, there is a dearth of studies of promotions applying time constraints, or ‘intertemporal cues.’ Time-constraints/intertemporal cues influence consumers’ evaluations of deal value (see Inman et al., 1997; Tan & Hwang Chua, 2004). Hence, this thesis uses non-monetary seasonal and non-seasonal promotions as cues as they might influence the framing effect.

Moreover, multi-channel retailers’ level of integration may affect consumers’ choices based on their preferences. Their self-perceptions may give them more confidence by reducing the risk of not being able to return the product if they do not like it (see Liljander, Polsa, & van Riel, 2009; Mitchell, 1992). It could be argued that a high level of channel integration might increase consumer perceptions of low risk, which can lead to higher purchase intentions. Channel integration plays a significant role influencing, for instance, transaction value (e.g., Chatterjee, 2007; Verhoef et al., 2015) and sales growth (e.g. Akturk et al., 2018; Cao & Li, 2015) and reducing consumer risk (e.g. Akturk et al., 2018; Herhausen et al., 2015; Zhuang et al., 2018). Therefore, many multi-channel retailers attempt to increase the service quality of their channel integration to gain competitive advantages. This motivates the current study to investigate the moderating role of channel integration.

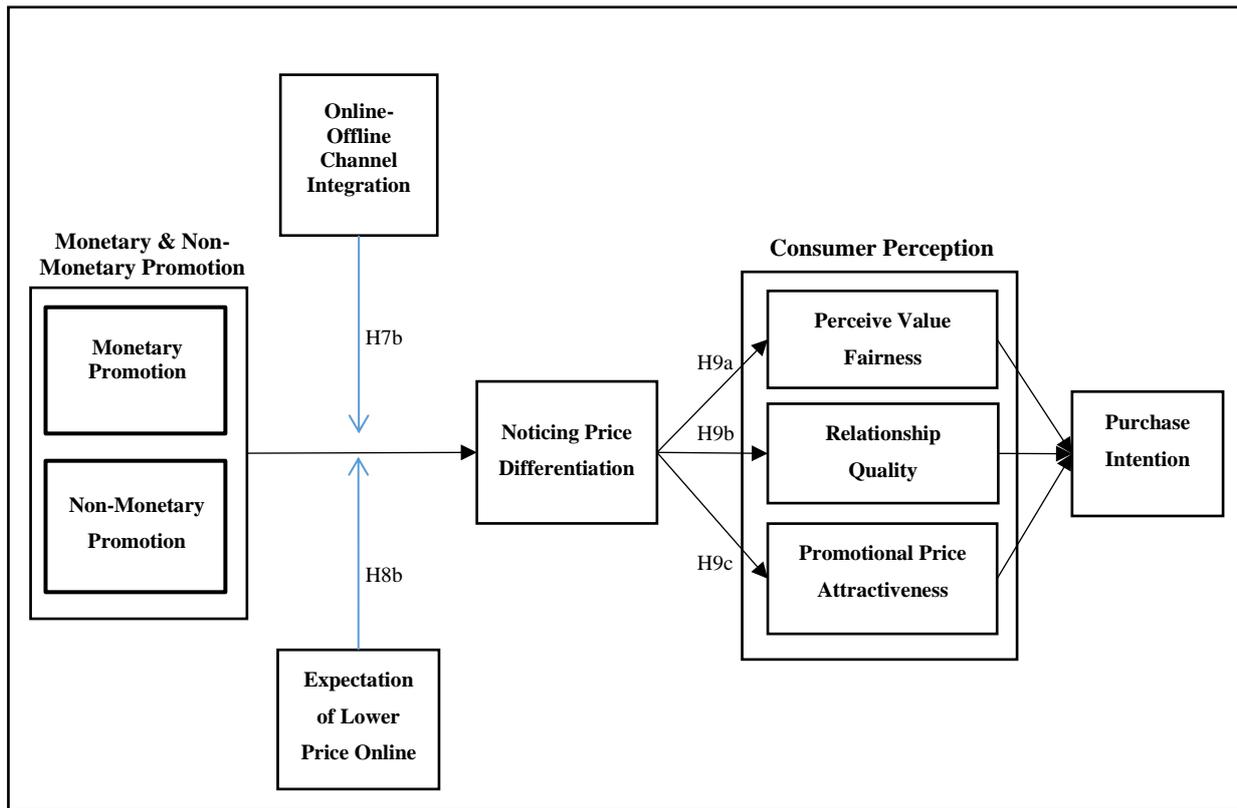
This study considers whether consumers perceive channels as integrated or non-integrated. The two levels of high and low integration are based on several logistical dimensions, such as shipping, returns and product exchange policy across the same retailer’s multiple channels. The study assumes that channel integration influences consumers to make them less likely to notice price differentiation.

Furthermore, the marketing literature shows that perceived value and consumer satisfaction are closely related constructs (e.g., Bolton & Lemon, 1999; Fornell et al., 1996; Johnson et al., 2006). Monetary cost/price is usually related to the quality of products to determine their perceived value (Zeithaml, 1988). It could be argued that consumer satisfaction might increase purchase intentions. Similarly, when consumers notice a price increase their purchase intentions will increase if they perceive worth or a valuable price. Chen et al. (1998) state that a price promotion should enhance perceived value and fairness. Monroe (1990) states that a purchase decision is based on value perception. Promotional price attractiveness might also influence purchase decisions when consumers notice price increases.

The aim of this study is to investigate various situations with monetary and non-monetary promotions in which consumers are more/less likely to notice price differentiation. First, it investigates monetary promotions with the external reference price format (i.e., was £ /now £), the reduced price now format (i.e., now £) and the saving price format (i.e., save £). Second, it investigates seasonal semantic (Black Friday) and non-seasonal semantic non-monetary promotional formats.

A third aim is to investigate how consumers notice price differentiation when non-monetary promotions and monetary promotions are used is moderated by low and high channel integration and expectations of lower prices online and offline. Finally, it investigates the mediating roles of (a) value fairness, (b) a quality relationship and (c) promotional price attractiveness in the effect of noticing price differentiation on purchase intentions. The below figure 6-1, shows the summary of the research framework for Study 2

Figure 6-1: Summary of the Research Framework for Study 2



6.2. Study Design

This study was seeking to examine different promotional price presentation formats towards noticing price differentiation and how its influence consumer perceptions. In order to investigate the various price presentation formats, this study researched the most common price promotional formats that influence consumer behaviour. As mentioned previously, there are two types of promotional themes: monetary and non-monetary promotions.

Analogously to previous experimental in study 1 to investigate noticing price differentiation where participants in study 1 exposed to online and offline channels to determine the differential price thresholds in each of these channels. However, study 2 focuses on various price stimuli that influence on noticing price differentiation in online-offline channel integration. The scenario development is similar to study 1 which describes a fictitious search for a white shirt. However, some important adjustments were made for the experiment in study 2. It designed the price differentiation based on 20% of increase price as a baseline. To avoid

memorising baseline price, it has shown three related clothes' product which are shirt, shoes and jacket.

6.2.1. Method

Study 2 designed by using what Herhausen et al. (2015) call online-offline channel integration (OI). The multiple experiments represented an online store and manipulated two levels of high and low channel integration. Each scenario provides information and details about the advantages of high or low channel integration, i.e., the possibility of returning the product bought online to any physical store. It used various combining of price presentation formats, including monetary and non-monetary promotions. Therefore, in study 2 multiple scenarios are used as follows: 2 levels of channel integration (high/low channel integration), 3 monetary promotion conditions (was £/now £, now £ and save £) and 2 non-monetary promotion conditions (seasonal/non-Seasonal). Hence, there are 12 groups.

It removed all recognisable information such as the identity of stores or brands name in the experiment to avoid bias. The monetary promotion price has manipulated in the shopping page. The detailed scenario descriptions and exemplary screenshots are documented in the [Appendix](#), p. 263. The following subsection will describe the context of the detailed scenarios that have used in study 2.

6.2.2. Scenarios

Each group of experiments has three combined conditions: monetary promotions, non-monetary promotions and channel integration. Similar scenarios of different contexts have used in studies such as Binder, 2013 and Herhausen et al., 2015. The scenarios developed to fit the purpose of this study regard of first read the imagination scenario and then the participants receive an email which added the condition of non-monetary promotion with increasing the price. The details of the conditions as following:

High Integration

Imagine that you are searching online for clothes at one of the most popular multi-channel retailers in the UK. The retailer has an internet website and several physical stores. This gives you an option to purchase the products from any channels you prefer. The online store navigation is convenient and you have the possibility to specifically select the available products according to categories, materials and application purposes. The overall graphic presentation of the online store is high-class. You are browsing the online shop and use the available information and services in order to find suitable clothes. The online store also informs you that the same conditions concerning service and the return of products apply across all distribution channels. It is also possible to return or exchange online purchases in any offline store without any further questions asked. At this time, you just look at random items without intent to purchase. The next page you will find several items.

Low Integration

Imagine that you are searching online for clothes at one of the most popular multi-channel retailers in the UK. The retailer has an internet website and several physical stores. This gives you an option to purchase the products from any channels you prefer. The online store navigation is convenient and you have the possibility to specifically select the available products according to categories, materials and application purposes. The overall graphic presentation of the online store is high-class. You are browsing the online shop and use the available information and services in order to find suitable clothes. At this time, you just look at random items without intent to purchase. The next page you will find several items.

Seasonal Condition

In the 'Black Friday' season, the retailer sent you a reminder email related of what you have looked previously. You are really like the 'long sleeve shirt', so you found the shirt as following.

Non-Seasonal Condition

In couple weeks, the retailer sent you a reminder email related of what you have looked previously. You are really like the 'long sleeve shirt', so you found the shirt as following.

6.2.3. Procedures

Study 2 tries to identify the consumer perceptions when noticing price differentiation for one product in the same retailer. Meanwhile, investigating various price stimuli towards noticing price differentiation.

At the beginning of the experiment, the participants were asked questions in order to filter those eligible to make sure the participants are multi-channel users. The experiment procedure designed with two pages to manipulate prices to measure noticeable price differentiation. Each page has three different products related to clothes as mentioned previously to avoid recall price bias (see the [Appendix](#), p. 263 for details). The first page showed the baseline prices and the second page are the increased prices with 20%. In this point, it manipulates the monetary promotional price by one of the thee promotional formats (was £/now £, now £ and save £). In the same time, the respondents read the imagination scenario whether in seasonal or non-seasonal situations. The respondents were then asked further questions to measure other aspects of consumer perceptions of prices.

6.2.4. Measurement

As far as the thesis knows there is no specific measurements exist to measure the noticeable price differentiation except the direct question, which already used in the study 1. Therefore, this study improved the measure of noticeable price differentiation to be 7-point scale instead of categorical scale (Yes/No). The improved question became as follows: “What extent did you notice price differentiation between the current price ‘X’ of above product and the price you saw in the previous page.” The scale of 7-points is:

Decrease (▼30%-) (▼20%-) (▼10%-) (No Change) (▲+10%) (▲+20%) (▲+30%) Increase.

Expectation of lower prices online was measured using five items borrow from other studies which measured the perception of lower prices online (Konus et al., 2008; Levin et al., 2003; Urbany et al., 1996; Yaraş et al., 2017) but were rephrased to fit the research design. These were: “Online stores normally provide better prices than shopping in traditional stores”; “Online stores provide better discount than shopping in traditional stores”; “Online stores normally provide better bargain than high street stores”; “Online stores provide discounts more frequent than traditional high-street stores”; “Online stores are continece for me to find better price than traditional high-street stores.”

The questionnaire of the experiment for this study also included channel integration questions that were asked at a later stage of the questionnaire. The channel integration was measured using three items, which is the most suitable for this study (Binder, 2013, p. 275; Herhausen et al., 2015). These were: “The online store makes easy to switch to the physical store”; “The services and functions in online store and the physical store complement each other”; “The online store and physical store have coordinated and aligned their services.”

In addition, this study measured important aspects of consumer perceptions, which is perceived value fairness that include perceived price value and price fairness. First, perceived

price fairness was measured using three items that most studies have applied (Bolton et al., 2010, 2003; Hong & Tam, 2006; Vogel & Paul, 2015; Xia et al., 2004). The three items adapted to be: "The price of the shirt is fair"; "The price of the shirt is justifiable"; "The price of the shirt is reasonable." Second, perceived price value was measured with the scale developed and refined by seven items which borrow from other studies that most related to this study (Dodds et al., 1991; Johnson et al., 2006; Vogel & Paul, 2015). When rephrased to fit the current research they were: "The shirt price at a good level for the money to pay"; "The shirt price is a good deal relative to other offers available in the market"; "The shirt price is a great value"; "At the price shown, the shirt is a very economical"; "The shirt is considered to be a good buy"; "The price shown for the product is a very acceptable"; "This shirt appears to be a bargain."

The promotional price attractiveness was measured using three items borrowed from Cheema and Patrick (2008). The three items were: "The price framing shows the discount is attractive"; "The price framing shows the discount is large"; "The price framing shows the discount is tempting."

Relationship quality is describing the consumer's personal relevance and retailers. It was measured using the scale developed from two aspects that are trust and satisfaction. The eight items borrowed from studies such as Fitzsimons (2000), Tax, Brown, and Chandrashekar (1998), Vogel and Paul (2015) and Zhang et al. (2018) because these items are the most compatible to the current study. Respondents were asked these questions: "Overall, I believe the retailer is honest"; "I believe the retailer can be relied upon to keep its promises"; "I would not find it necessary to be cautious in dealing with this retailer"; "I believe the retailer is trustworthy"; "Altogether, I am satisfied with retailer"; "Overall, I am satisfied with my shopping experiences at retailer"; "I'm totally convinced of this retailer"; "This retailer totally meets my expectations."

Purchase intention was measured using four items which have used by many researchers (e.g., Fassnacht & Unterhuber, 2016). These items were: “The likelihood of purchasing the product at this retailer is high”; “At these prices I would consider buying the product at this retailer”; “The probability that I would consider buying the product at this retailer is high”; “My willingness to buy the product at this retailer is high.”

Wherever possible, the constructs were measured with scales from publications in high ranking marketing journals, adapted for the specific topic of this study. The scales were held constant in all groups of this study with minor adaptations due to the product type contexts. All scales were measured on a seven-point scale unless indicated otherwise. Scale that was range by strongly agree/strongly disagree.

6.2.5. Pretest

The pre-test in the experiment of the second study by four groups of a total of 52 participants to examine whether participants perceive the experiments differ in terms of different scenarios of high and low channel integration and the reliability of factors that will use to measure in the actual study. The four groups are 2 channel integration (high/low) X 2 (seasonal/ non-seasonal). It relied on the pre-test to examine whether participants in the four groups are perceived the same regarding difficulty and credibility.

By using the T-test of difficulty and credibility of perceiving the scenarios of the conditions of high and low channel integration and seasonal and non-seasonal conditions the results as follow. First, the credibility of high channel integration ($M = 2.88$, $SD = 1.395$) and the low channel integration ($M = 2.69$, $SD = 1.490$), $p = .930$. Similarly, the difficulty of perceiving the scenarios of high channel integration ($M = 3.08$, $SD = 1.958$) and low integration ($M = 2.08$, $SD = 1.521$), $p = .163$. Second, the credibility of seasonal condition ($M = 2.58$, $SD = 1.206$) and non-seasonal condition ($M = 3.00$, $SD = 1.625$), $p = .348$. In terms of the difficulty

of how participant perceive scenarios of seasonal cue ($M = 2.50$, $SD = 1.944$) and non-seasonal condition ($M = 2.65$, $SD = 1.696$), $p = .467$. Thus, the participants perceived both conditions of high and low channel integration and seasonal cue are credible, and the scenarios are not difficult.

In terms of the reliability of the factors that will use in the actual study as follow. The Cronbach alpha of five items to measure the expectation of lower price online is (.761) and the Cronbach alpha of channel integration by using three items is (.773). Moreover, the Cronbach alpha of seven items to measure perceived price value is (.968), three items of perceived price fairness are (.928), and eight items to measure quality relationship is (.953). Finally, the Cronbach alpha of four items to measure purchase intentions is (.952).

6.2.6. Manipulation of the Independent Variables

The manipulation check used two items. To measure monetary promotions respondents were asked their opinion about the price formats “The price framing shows the amount of the discount.” It measured non-monetary promotions were asked respondents their opinion about the deal “I perceived the promotion that I received happen once a year.”

Furthermore, it used two items to make sure all groups are equal regarding of credibility and not difficult at all (Herhausen et al., 2015). It asked respondents “How credible was the scenario described the task on your opinion” the range of 7 points (credible/not very credible). It also asked, “How difficult to understand was the described task in your opinion.” It used 7 points (not difficult at all/very difficult).

6.3. Study 2: Data Analysis

6.3.1. Sample Description

Study 2 collected data from 720 participants in a total of 12 groups with each group having 60 participants. As Table 6-1 shows, 70.8% of the respondents were female and 29.2% male. More

than half of the respondents (64.5%) were aged between 18 and 35. The net monthly income is 44% of the respondents was between £1000 and £2000 and it follows by 34.6% of the net monthly income which is less than £1000. Finally, the frequency of clothes shopping for 61.8% of the sample was monthly.

Table 6-1: Sample Characteristics

Gender	Male	29.2%
	Female	70.8%
Age	18 - 35	64.5%
	36 - 50	24.3%
	≤ 51	11.2%
Net Income	Less than £1000	34.6%
	£1000 - £2000	44%
	< £ 2000	21.4%
Shopping Frequency	Weekly	5.7%
	Monthly	61.8%
	Every three month	24.6%
	Less often	7.9%

6.3.2. Manipulation Check

This study has monetary and non-monetary promotions as independent variables. First, the monetary promotions have three situations: (was £/now £, now £ and save £). It used the ANOVA test and the result showed there were statistically significant differences, $p < (.001)$ in perceiving monetary promotion for all three price formats (was £/now £, now £ and save £). The post hoc test for all three price formats are significant differences, $p < .001$.

Second, the non-monetary promotions have two situations: seasonal and non-seasonal. The result of T-test showed there is a statistically significant difference between seasonal and

non-seasonal, $p = .013$. Hence, the manipulation check of independent variables revealed that the respondents perceived the scenarios differently. The follows subsection will show how participants perceived the whole experiment.

Manipulation and Confound Checks

It used two questions to check how participants perceived this study includes credibility and difficulty of the experiment. It used the T-test for credibility and difficulty for both high and low channel integration.

The results indicated that there were no statistically significant differences in credibility, ($p = .657$) across conditions of high channels integration, ($M = 5.23, SD = 1.47$) and low channel integration, ($M = 5.09, SD = 1.51$). On the other side, there were no statistically significant differences in difficulty, ($p = .235$) across conditions of high channel integration, ($M = 5.32, SD = 1.61$) and low channel integration, ($M = 5.26, SD = 1.68$). Hence, the manipulation check proves that all scenarios are equal. The results suggested that all scenarios were considered to be equally credible and easy to understand.

6.3.3. Data Reliability and Validity

It checked the reliability and validity scales. In EFA were used the 'Principle Component' showed that there were six components see Table 6-2, with $KMO = .947, p < .001$. Cronbach's alpha for all variables > 0.8 , which means all variables are reliable. The KMO index from (0 to 1) which measures the sampling adequacy between the correlations variables and with those of the partial correlations (Pallant, 2013). Hutcheson and Sofroniou (1999) suggested that a KMO value under 0.5 is unacceptable, 0.6 – 0.7 is mediocre, 0.8 – 0.9 is meritorious, and 0.9 and above is marvellous. The variance explained loading by 73.746: all variables' extraction > 0.6 . Hence, the results showed good results in terms of factors loading and Cronbach's alpha. Note that one item removed from value fairness to have stronger results.

Table 6-2: Exploratory Factor Analysis

Variables	Factor Loading (N = 720)
Value Fairness	α .958
The price of the shirt is fair.	.852
The price of the shirt is reasonable.	.829
The shirt price at a good level.	.865
The shirt price is at good deal relative to other offers available on the market.	.784
The shirt price is great value.	.864
At the price shown, the shirt is a very economical.	.867
The shirt is considered to be a good buy.	.868
The price shown for the product is a very acceptable.	.866
This shirt appears to be a bargain.	.842
Quality Relationship	α .948
Overall, I believe the retailer is honest.	.842
I believe the retailer can be relied upon to keep its promises.	.886
I would not find it necessary to be cautious in dealing with this retailer.	.868
I believe the retailer is trustworthy.	.978
Altogether, I am satisfied with retailer.	.853
Overall, I am satisfied with my shopping experiences at retailer.	.801
I'm totally convinced of this retailer.	.809
This retailer totally meets my expectations.	.669

Promotional Price Attractiveness	α .924
The price framing shows the discount is attractive.	.935
The price framing shows the discount is large.	.947
The price framing shows the discount is tempting.	.909
Channel Integration	α .840
The online store makes easy to switch to the physical store.	.812
The services and functions in online store and the physical store complement each other.	.901
The online store and physical store have coordinated and aligned their services.	.906
Expectation of Lower Price Online	α .856
Online stores normally provide better prices than shopping in traditional stores.	.804
Online stores provide better discount than shopping in traditional stores.	.867
Online stores normally provide better bargain than high street stores.	.835
Online stores provide discounts more frequent than traditional high-street stores.	.736
Online stores are continece for me to find better price than traditional high-street stores.	.738
Purchase Intention	α .967
The likelihood of purchasing the product at this retailer is high.	.842
At these prices I would consider buying the product at this retailer.	.900
The probability that I would consider buying the product at this retailer is high.	.867
My willingness to buy the product at this retailer is high.	.870

Moreover, with a view to overcome the disadvantage of Cronbach's alpha index to improve the reliability and validity, study 2 relies on a more accurate approach by utilising the output of CFA in terms of reliability, convergent and discernment validity. The CFA test includes: Composite Reliability (CR), Average Variance Extracted (AVE), Maximum Shared Variance (MSV) and Average Shared Variance (ASV). It used AMOS by calculated the correlations and standardised regression. The (CR) is a method has less biased to measure the reliability of the factors and its value above .75 is desirable (Peterson & Kim, 2013). Whereas the (AVE) is the average amount of variance in the indicator variables that a construct explains and it values above .5 which considered as sufficient (Hair et al., 2006). The (MSV) measures the extent to which the factor is explained by items outside that factor. Table 6-3 shows a summary of the measurement reliability and convergent validity results. It shows all scales that have met the measurement requirements of good discriminant measurement validity.

In addition, there are several indices for the CFA indicating the model fit. Hu and Bentler (1999) suggested that the indication for a good fit when the cutoff value of RMSEA close to .06. and CFI close to .95. Similarly, Schreiber et al. (2006) identified benchmarks for the cutoff for generally accepted value for model fit that CFI = .95 for acceptance, GFI =.95 for acceptance, RMR Smaller, the better; 0 indicates perfect fit, AGFI =.95 performance poor in simulation studies, RMSEA < .06 to .08 with confidence interval. In terms of the CMIN in AMOS is referred to chi-square value and should not be significant if there is a good model fit. However, if the chi-square value is a statistically significant so that indicate the model does not fit the data well (Westland, 2016). Thus, the results of CFA model fit in Table 6-4 illustrates good values for the model fittings.

Table 6-3: Discriminant Validity Test Results

	CR	AVE	MSV	Value Fairness	Quality Relationship	ELPO	Promotion Attractive	Channel Integration	Purchase Intentions
Value Fairness	.957	.713	.705	.845					
Quality Relationship	.947	.689	.363	.602***	.830				
ELPO	.859	.551	.017	.121**	.108**	.742			
Promotion Attractive	.924	.803	.161	.401***	.397***	.129**	.896		
Channel Integration	.849	.654	.112	.148***	.260***	.075†	.334***	.809	
Purchase Intentions	.967	.881	.705	.840***	.575***	.066	.373***	.138***	.938

Significance of correlations:

† $p < .100$; * $p < .050$; ** $p < .010$; *** $p < .001$

Table 6-4: Model Fit

Measure	Threshold	Measure	Threshold
CMIN/DF	2.39	AGFI	.898
P-value	.001	RMR	.069
CFI	.971	RMSEA	.044
GFI	.915	PCLOSE	.998

6.4. Results

This study investigated six variables that influence consumers when noticing price differentiation. Therefore, at the beginning will illustrate the mean and the standard deviation of these variables in Table 6-5 and follow by how these variables correlated to each other in Table 6-6.

Table 6-5: The Mean of the Variables

Variables	Mean	Standard Deviation
Noticing Price Differentiation	- 0.15	.973
Value Fairness	3.90	1.179
Quality Relationship	4.29	1.066
Promotional Price Attractiveness	4.21	1.735
Channel Integration	4.56	1.195
The Expectation of Lower Price Online	5.28	.966
Purchase Intentions	3.54	1.530

It is highly remarkable that the mean of noticing price differentiation is (- 0.15) which means that consumers in general noticed the price has decreased. It is due to the promotional price presentation formats.

Regarding of correlation, the Table 6-6 shows the relationships between the noticing price differentiation and other variables. The noticing price differentiation has a negative correlation with value fairness, $r (-.17)$, $p < (.001)$; promotional price attractiveness, $r (-.16)$, $p < (.001)$; quality relationship, $r (-.23)$, $p < (.001)$; purchase intentions, $r (-.15)$, $p < (.001)$; expectation of lower price online (ELPO), $r (-.07)$, $p = (.057)$. However, there is no significant correlation between the noticing price differentiation and channel integration, $p = .447$.

Hence, if any variable increased which already has had a negative correlation with the noticing price differentiation, will influence the relationship to decrease the notice differentiation. The next subsections will show the results of different conditions towards noticing price differentiation.

Table 6-6: Correlations of Variables

		JND	Channel Integration	Promotion Attractive	ELPO	Value Fairness	Purchase Intentions
Channel Integration	Correlation	-.02					
	Sig.	.447					
Promotion Attractive	Correlation	-.16**	.30**				
	Sig.	.000	.000				
ELPO	Correlation	-.07	.08*	.12**			
	Sig.	.057	.031	.001			
Value Fairness	Correlation	-.17**	.15**	.37**	.11**		
	Sig.	.000	.000	.000	.004		
Purchase Intentions	Correlation	-.15**	.14**	.35**	.06	.82**	
	Sig.	.000	.000	.000	.104	.000	
Quality Relationship	Correlation	-.23**	.25**	.38**	.11**	.58**	.55**
	Sig.	.000	.000	.000	.005	.000	.000

6.4.1. Monetary Promotion in Noticing Price Differentiation

It will explain how participants perceived price formats of different groups regarding noticing price differentiation. The prospect theory demonstrates that the framing effect could be differed as gain and loss situations as mentioned in Chapter Two. The thesis assumes that different formats of monetary promotions includes: (was £/now £, now £ and save £) might have significant differences in noticing price differentiation. In this point, study 2 examines these hypotheses.

H5a: When a monetary promotion strategy is used, consumers are less likely to notice the price difference in an external reference price format (i.e., was £/now £) than in a reduced price now format (i.e., now £).

H5b: When a monetary promotion strategy is used, consumers are less likely to notice the price difference in an external reference price format (i.e., was £/now £) than in a savings format (i.e., save £).

H5c: When a monetary promotion strategy is used, consumers are less likely to notice the price difference in a savings format (i.e., save £) than in a reduced price now format (i.e., now £).

It used ANOVA test to investigate the noticing price differentiation for the three different price promotional presentation formats. It includes also other variables of consumer perception for these three conditions. The ANOVA test showed that there are statistically significant differences in the noticing price differentiation across all formats of promotional price presentation, $p < .001$, $F(2,717) = 14.678$.

The post hoc test in Table 6-7 indicates that there is a statistically significant difference in the noticing price differentiation between (was £/now £) comparing with (now £ and save £), $p < .001$. However, there are no statistically significant differences in the noticing price differentiation between (now £) and (save £), $p = .127$.

Table 6-7: Monetary Promotions of ANOVA Test

ANOVA		JND	Value Fairness	Quality Relationship	Promotion Attractive	Purchase Intentions
Monetary Promotion	Multiple Comparison	.001	.001	.001	.001	.001
Was £/Now£	Now £	.001	.001	.001	.001	.001
	Save £	.001	.001	.003	.001	.001
Now £	Was £/Now£	.001	.001	.001	.001	.001
	Save £	.127	.438	.077	.001	.327
Save £	Was £/Now£	.001	.001	.001	.001	.001
	Now £	.127	.438	.077	.001	.327

In addition, by using T-test to compare pairs groups as follows: comparing the format ‘was £/now £’ and ‘now £’ the results showed there is a statistically significant difference in noticing price differentiation, $p < .001$; by comparing the format ‘was £/now £’ and ‘save £’ the results showed there is a statistically significant difference in noticing price differentiation, $p < .001$; comparing also the promotional format of ‘save £’ and ‘now £’ the results showed that there is a statistically significant difference in noticing price differentiation, $p < .001$. This test to insure all three price formats have statistically significant differences.

It compared the mean value of noticing price differentiation at the three promotional price presentation formats. First, in the comparison between ‘was £/now £’ and ‘now £’ it found that the noticing price differentiation in ‘now £’ format, ($M = .05, SD = .722$) more than ‘was £/now £’ format, ($M = - 0.41, SD = 1.090$). Second, in the comparison of promotional formats ‘was £/now £’ and ‘save £’ the result found that the noticing price differentiation in ‘save £’ format, ($M = - 0.09, SD = 1.013$) more than ‘was £/now £’ format, ($M = - 0.41, SD = 1.090$). Third, in the comparison of promotional formats ‘now £’ and ‘save £’ it found that the noticing

price differentiation in ‘now £’ format, ($M = 0.05$, $SD = 0.722$) more than ‘save £’ format, ($M = -0.09$, $SD = 1.013$). Hence, the hypotheses $H5a$, $H5b$ and $H5c$ are accepted.

Furthermore, the three formats of monetary promotions have statistically significant differences with consumer perceptions as shown in Table 6-7. Consumer perceptions include, perceived value fairness, $p < .001$; perceived quality relationship, $p < .001$; perceived promotional price attractiveness, $p < .001$; perceived purchase intention, $p < .001$. Thus, the difference of noticing price differentiation of various situations of monetary promotion formats are due to the framing effect of perceiving gain and loss based on prospect theory. The promotional price format ‘was £/now £’ frame the deal as gain situation which consumers are less likely to notice price differentiation and follows by ‘save £’ format and then the ‘now £.’

6.4.2. Non-Monetary Promotion in Noticing Price Differentiation

The non-monetary promotions as consider in this thesis as seasonal and non-seasonal conditions. These two conditions might influence to reduce the noticing price differentiation based on prospect theory. It was assumed the following hypothesis based on seasonal and non-seasonal promotions towards noticing price differentiation. *H6: When presenting a non-monetary promotion, seasonal semantic cues (Black Friday) make it less likely that price differentiation will be noticed than in deals with non-seasonal semantic cues.*

The results of T-test showed there is no statistically significant difference in the noticing price differentiation between seasonal and non-seasonal conditions, $p = .731$, $t(718) = (.345)$. Noticing price differences for the seasonal condition is ($M = -0.16$, $SD = 0.955$). Similarly, noticing price differences for the non-seasonal condition is ($M = -0.14$, $SD = 0.952$). Hence, hypothesis $H6$ is not accepted as there is no statistically significant difference in the noticing price differentiation between the seasonal and non-seasonal conditions of non-monetary promotions.

In conclusion, the effect of the seasonal cue is similar to effect of non-seasonal cue towards noticing price differentiation. In other words, the seasonal and non-seasonal conditions are perceived as gain situation but the framing effect of gain situation due to the greater effect of the monetary promotional rather than the non-monetary promotion. Previous studies found that the monetary promotions are more effective in comparison to non-monetary promotions (Alvarez & Casielles, 2005; Gilbert & Jackaria, 2002; Sinha & Verma, 2020).

6.4.3. High and Low Channel Integration in Noticing Price Differentiation

The thesis assumed that consumers might notice price differentiation in high channel integration less than low channel integration. The advantages of each condition in high and low channels integration might make that difference. It was assumed the following hypothesis.

H7a: With high channel integration, consumers are less likely to notice price differences than with low channel integration.

By using the T-test, the results found there is no statistically significant difference in the noticing price differentiation between high and low channel integration, $p = .085$, $t(718) = 1.726$. The value of noticing price differentiation in high channel integration is ($M = -0.21$, $SD = .971$). Similarly, the value of noticing price differentiation in low channel integration is ($M = -0.09$, $SD = .972$). Hence, hypothesis *H7a* is not accepted as there is no statistically significant difference in the noticing price differentiation between high and low channel integration.

To conclude, although the online-offline high channel integration frames the participants to notice that price decreased more than the low channel integration but both conditions are perceived as gain situation and frame the participants to notice that price has been decreased.

6.4.4. Displaying Monetary and Non-Monetary in Context of Channel Integration

As far as the thesis knows that the literature in Chapter Two illustrates there is a dearth of empirical studies in terms of using monetary and non-monetary promotions in the same deal to measure the noticing price differentiation. It assumed the following hypothesis of the displaying both conditions of monetary and non-monetary in the context of high and low channel integration. *H7b: Channel integration moderates the effect of promotion formats on noticeable price difference, so in high channel integration, the monetary and non-monetary promotions will result the low level of a noticeable difference compare with low channel integration.*

First, it tested both independent variables with moderator as one sample of three ways interaction. Afterwards, it divided the data to high and low channel integration. It used univariate test in SPSS to investigate noticing price differences. The ANOVA test showed that the main effect of monetary promotion, $p < .001$, $F(2,713) = 14.639$; the non-monetary promotion, $p = .725$, $F(1,713) = .123$; channel integration, $p = .079$, $F(1,713) = 3.087$. However, when recalculated the interactions effect of 'monetary promotion, non-monetary promotion and channel integration' the result showed that there is a statistically significant effect, $p = .001$, $F(6,713) = 3.785$.

Second, it divided the data into two groups: high and low channel integration, see Figure 6-2. The interaction effect of 'monetary promotion and non-monetary promotion' showed there is a statistically significant effect of both conditions, see Table 6-8: the low channel integration, $p = .010$, $F(5,354) = 3.046$, and at high channel integration, $p = .002$, $F(5,354) = 3.046$.

Figure 6-2: Displaying Monetary and Non-Monetary

High Channel Integration				Low Channel Integration			
		Non-Monetary				Non-Monetary	
		Seasonal (S)	None (NS)			Seasonal (S)	None (NS)
Monetary	Was/Now	Was/Now * S	Was/Now * NS	Monetary	Was/Now	Was/Now * S	Was/Now * NS
	Now	Now * S	Now * NS		Now	Now * S	Now * NS
	Save	Save * S	Save * NS		Save	Save * S	Save * NS

Table 6-8: Displaying Monetary and Non-Monetary

Interaction	High Integration			Low Integration		
	Mean	F	Sig	Mean	F	Sig
Corrected Model	3.609	3.987	.002	2.798	3.046	.010
Intercept	16.469	18.192	.000	2.844	3.097	.079
Monetary * Non-Monetary	3.609	3.987	.002	2.798	3.046	.010
Error	.905			.919		

To understand each group of monetary promotions when displaying the non-monetary promotion between-group of high and low channel integration, the further results show in Table 6-9. In this test divided the data to seasonal and non-seasonal conditions to compare the noticing price differentiation of different promotional presentation formats. In high channel integration, consumers are less likely to notice price differentiation, ($M = -.21$, $SD = .972$) comparing with low channel integration, ($M = -.09$, $SD = .972$). However, there is no statistically significant difference, $p = .341$. In addition, the total price format of (was £/now £) in low channel integration is ($M = -.37$, $SD = 1.107$) and the high channel integration is ($M = -.46$, $SD = 1.076$). Hence, this format is the optimal promotion format to noticing the decreased of prices more than other formats in both situations of high and low channel integration.

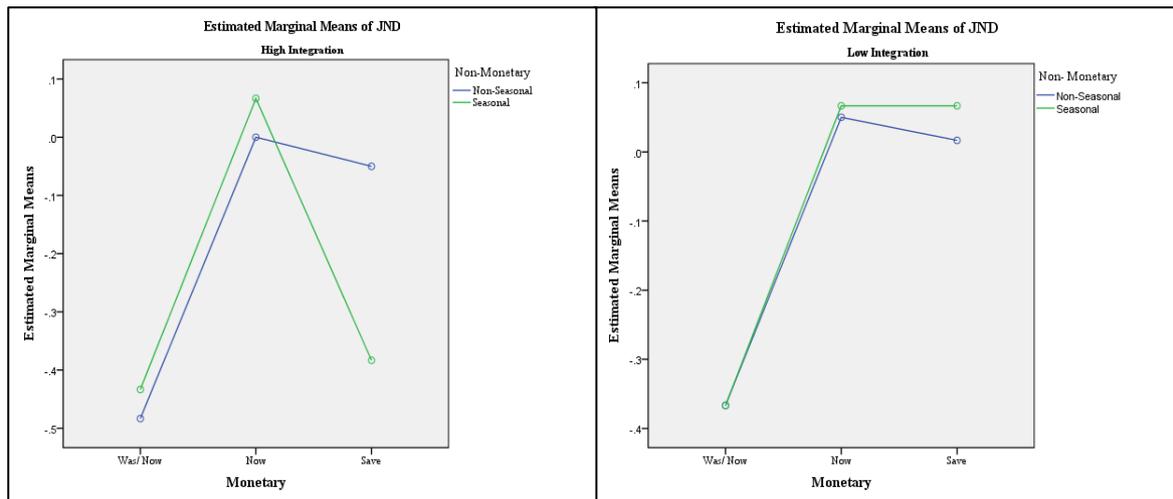
Table 6-9: High and Low Channel Integration. Monetary vs. Non-Monetary

Channel Integration	Monetary promotion	Non-Monetary Promotion	Mean	SD
Low	Was £/Now £	Non-Seasonal	-.37	1.104
		Seasonal	-.37	1.119
		Total	-.37	1.107
	Now £	Non-Seasonal	.05	.852
		Seasonal	.07	.607
		Total	.06	.737
	Save £	Non-Seasonal	.02	.911
		Seasonal	.07	1.056
		Total	.04	.982
	Total	Non-Seasonal	-.10	.975
		Seasonal	-.08	.971
		Total	-.09	.972
High	Was £/Now £	Non-Seasonal	-.48	1.142
		Seasonal	-.43	1.015
		Total	-.46	1.076
	Now £	Non-Seasonal	.00	.713
		Seasonal	.07	.710
		Total	.03	.709
	Save £	Non-Seasonal	-.05	1.064
		Seasonal	-.38	.976
		Total	-.22	1.030
	Total	Non-Seasonal	-.18	1.009
		Seasonal	-.25	.933
		Total	-.21	.971

More interesting in this study that in high channel integration when using ‘save £’ promotion format, participants perceived the price has decreased, ($M = -.22$, $SD = 1.030$). Unlikely, in the low channel integration when using the same promotion formats ‘save £’, participants perceived the price has increased, ($M = .04$, $SD = .982$), see Figure 6-3 for more explanation. Hence, this research accepted the hypothesis *H7b*.

Figure 6-3: Multiple Comparison of High/Low Integration

Monetary vs. Non-Monetary



6.4.5. High vs. Low Expectation of Lower Price Online in Noticing Price Differentiation

The thesis argues when the consumers expect a high level of lower price in online channel, they less likely notice price differentiation. However, when consumers have low expectations of lower prices in online channel, consumers are more likely to notice price differentiation when shopping in online-offline channel integration. Furthermore, when displaying both conditions of monetary and non-monetary promotions for the same deal, consumers might less likely to notice price differentiation moderated by the high and low expectation of lower price online. It assumed the following hypotheses.

H8a: The greater the expectation of lower prices online, the less consumers are likely to notice price differentiation when shopping in online-offline channel integration, compared with low level of expecting lower prices online.

H8b: Expecting lower prices online moderate the effect of promotion formats on noticeable price difference, so in high level of expecting lower prices online, the monetary and non-monetary promotions will result low level of a noticeable difference compare with low level for expecting lower prices online.

The data found that the high-level expectations of lower prices online (92.5%) compare with low expectation of lower prices online with (7.5%). By using the T-test to compare high and low expectation of lower prices, the high expectation of lower price online is ($M = -.15$, $SD = .974$) and low expectation of lower price online is ($M = -.11$, $SD = .965$), $p = .752$.

Regarding of moderation role of high and low expectation lower price, it will show the results of the interaction of monetary and non-monetary promotions. By using univariate test, two ways ANOVA, the interactions of (monetary, non-monetary and the expectations of lower price online) have statistically significant effect, $p = .001$, $F(6,713) = 5.796$. Furthermore, it divided the data into two groups of high and low expectations of lower price online. The interaction of monetary and non-monetary promotions in each group of high and low expectations of lower prices online have different result in noticing price differentiation: the high expectation, $p = .001$, $F(5,660) = 5.574$; the low expectation, $p = .649$, $F(5,48) = .699$, see Table 6-10. Hence, it did not accept the hypothesis *H8a* but accepted *H8b*.

Table 6-10: Interaction of Monetary and Non-Monetary

Interaction	High Expectations of Lower Price Online			Low Expectations of Lower Price Online		
	Mean	F	Sig	Mean	F	Sig
Corrected Model	5.090	5.547	.001	.643	.669	.649
Intercept	15.592	16.992	.001	.768	.799	.376
Monetary * Non-Monetary	5.090	5.547	.001	.643	.699	.649
Error	.918			.961		

6.4.6. The Impact of Noticing Price Differentiation on Purchase Intentions

The path analysis was conducted to measure the mediating effect of consumer perceptions – of value fairness, a quality relationship and promotional price attractiveness – in the relationship between noticing price differentiation and purchase intentions. This part will investigate the mediating effect of consumer perceptions on purchase intentions when consumers notice price differences. The thesis assumed the following hypotheses.

H9a: Perceived value fairness mediates the effect of noticeable price differences on purchase intention. H9b: Perceived a quality relationship mediates the effect of noticeable price differences on purchase intention. H9c: Perceived promotional price attractiveness mediates the effect of noticeable price differences on purchase intention.

The mediating role of consumer perceptions was calculated using the PROCESS procedure in SPSS ‘Model 4’ (Hayes, 2018). The reason for using this test is to obtain a path analysis including the regression coefficient between noticing price differentiation and purchase intentions through the multiple mediators of consumer perceptions.

This test obtained an output along with 95% bias-corrected bootstrap confidence intervals based on the 5,000 bootstrap samples. The overall model for value fairness, $F(1,718) = 21.69, p < .001$; quality relationship, $F(1,718) = 38.43, p < .001$; promotional price attractiveness, $F(1,718) = 19.06, p < .001$. The results were calculated for all the samples, which means there are three cases of noticing price differentiation (i.e., noticing an increased price, noticing a decreased price and not noticing the change). Therefore, the following will show the results of ‘all samples’ follow by the results of the three cases of noticing price differentiation.

In the case of ‘all samples’ the direct effect between the noticing price differentiation and purchase intention is not statistically significant, $p = .810, c' = .008$, see Table 6-11. On the

other hand, the results of the indirect effect between noticing price differentiation and purchase intentions through the mediating show as follows:

First, noticing price differentiation to value fairness, $p < .001$, a_1 (-.208) and the value fairness to purchase intention, $p = .001$, b_1 (.965). The indirect effect between the noticing price differentiation and purchase intentions through the value fairness, $a_1b_1 = (-.200)$ resides somewhere between -.290 and -.107.

Second, noticing price differentiation to quality relationship, $p < .001$, a_2 (-.247) and the quality relationship to purchase intentions, $p < .001$, b_2 (.153). The indirect effect between the noticing price differentiation and purchase intentions through the quality relationship, $a_2b_2 = (-.038)$ resides somewhere between -.066 and -.018.

Third, noticing price differentiation to promotional price attractiveness, $p < .001$, a_3 (-.287) and the promotional price attractiveness to purchase intentions, $p = .154$, b_3 (.029). There is no indirect effect between the noticing price differentiation and purchase intentions through the promotional price attractiveness, $a_3b_3 = (-.009)$ resides somewhere between -.024 and .003.

To sum up, the path analysis for ‘all samples’ between noticing price differentiation and purchase intentions is fully mediated by value fairness and a quality relationship, see Table 6-11. Next part shows the results of recalculating the test to investigate the cases of noticing an increased price and a decreased price but excluding the case of not noticing the change because, although this study concentrates on noticing price differentiation, there is a direct relationship between not noticing the change and purchase intentions, $p = .007$, $c' = (.183)$. Noticing price increases and decreases will be compared with the results for ‘all samples.’

First, when a consumer perceived an increase in price differentiation there is no direct relationship between the noticeable price differentiation and purchase intentions, $p = .067$, $c' = (-.293)$ through fully mediator between noticing price differentiation and quality relationship,

$p = .045$, $a_2 = (-.436)$. The relationship between quality relationship and purchase intentions is a statistically significant, $p = .024$, $b_2 (.238)$. Whereas the other consumer perceptions have not statistically significant between noticing price differentiation and purchase intentions. The relationship between noticing price differentiation and value fairness, $p = .322$, $a_1 = (-.237)$, and value fairness to purchase intention, $p = .001$, $b_1 = (.878)$. In addition, the relationship between noticing price differentiation and promotional price attractiveness is a statistically significant, $p = .007$, $a_3 (-.805)$ but the relationship between promotional price attractiveness and purchase intentions is not statistically significant, $p = .231$, $b_3 (-.069)$.

In the second case of noticing a decreased price, there is also no direct relationship between noticeable price differentiation and purchase intentions, $p = .497$, $c' = (-.072)$ fully mediated by value fairness and promotional price attractiveness. The relationship between noticing price differentiation and value fairness is a statistically significant, $p = .030$, $a_1 = (.332)$, and the relationship between value fairness and purchase intentions is a statistically significant, $p < .001$, $b_1 = (1.05)$. The relationship between noticing price differentiation and promotional price attractiveness is a statistically significant, $p = .012$, $a_3 = (.419)$ and the relationship between promotional price attractiveness and purchase intention, $p = .026$, $b_3 = (.116)$. In contrast, there is not statistically significant between noticing price differentiation with a quality relationship, $p = .193$, $a_2 = (.172)$ or a statistically significant correlation between a quality relationship and purchase intentions, $p = (.945)$, $b_2 = (.005)$.

It highly notable that in all cases of noticing price differentiation the relationship between value fairness and purchase intention is positive and statistically significant, $p < .001$. This led the thesis to examine the three cases of all samples, noticing an increased price and noticing a decreased price to compare value fairness and purchase intentions.

Table 6-11: Summary of Direct & Indirect Effect

Direct & Indirect Effect	All Samples (N = 720)	Increased (N = 108)	Decreased (N = 171)
Direct Effect Notice Difference → Purchase Intention	ND → PI: $c' = (.008), p = (.810)$ <i>LLCI</i> (-.059) <i>ULCI</i> (.075)	ND → PI: $c' = (-.293), p = (.067)$ <i>LLCI</i> (-.607) <i>ULCI</i> (.021)	ND → PI: $c' = (-.072), p = (.497)$ <i>LLCI</i> (-.282) <i>ULCI</i> (.137)
Notice Difference → Value Fairness → Purchase Intention.	ND → VF: $a_1 = (-.208), p = (.001)$. VF → PI: $b_1 = (.965), p = (.001)$. Indirect effect: $a_1 b_1 = (-.200)$. <i>LLCI</i> (-.290) <i>ULCI</i> (-.107)	ND → VF: $a_1 = (-.237), p = (.322)$. VF → PI: $b_1 = (.878), p = (.001)$. Indirect effect: $a_1 b_1 = (-.208)$. <i>LLCI</i> (-.678) <i>ULCI</i> (.236)	ND → VF: $a_1 = (.332), p = (.030)$. VF → PI: $b_1 = (1.05), p = (.001)$. Indirect effect: $a_1 b_1 = (.347)$. <i>LLCI</i> (.041) <i>ULCI</i> (.649)
Notice Difference → Quality Relationship → Purchase Intention.	ND → QR: $a_2 = (-.247), p = (.001)$. QR → PI: $b_2 = (.153), p = (.001)$. Indirect effect: $a_2 b_2 = (-.038)$. <i>LLCI</i> (-.066) <i>ULCI</i> (-.018)	ND → QR: $a_2 = (-.436), p = (.045)$. QR → PI: $b_2 = (.238), p = (.024)$. Indirect effect: $a_2 b_2 = (-.104)$. <i>LLCI</i> (-.344) <i>ULCI</i> (.005)	ND → QR: $a_2 = (.172), p = (.193)$. QR → PI: $b_2 = (.005), p = (.945)$. Indirect effect: $a_2 b_2 = (.001)$. <i>LLCI</i> (-.032) <i>ULCI</i> (.047)
Notice Difference → Price Attractive → Purchase Intention.	ND → PA: $a_3 = (-.287), p = (.001)$. PA → PI: $b_3 = (.029), p = (.154)$. Indirect effect: $a_3 b_3 = (-.009)$. <i>LLCI</i> (-.024) <i>ULCI</i> (.003)	ND → PA: $a_3 = (-.805), p = (.007)$. PA → PI: $b_3 = (-.069), p = (.231)$. Indirect effect: $a_3 b_3 = (.056)$. <i>LLCI</i> (-.019) <i>ULCI</i> (.214)	ND → PA: $a_3 = (.419), p = (.012)$. PA → PI: $b_3 = (.116), p = (.026)$. Indirect effect: $a_3 b_3 = (.049)$. <i>LLCI</i> (.003) <i>ULCI</i> (.142)
Total Indirect Effect	$= (-.247)$. <i>LLCI</i> (-.351) <i>ULCI</i> (-.137)	$= (-.256)$. <i>LLCI</i> (-.825) <i>ULCI</i> (.319)	$= (.397)$. <i>LLCI</i> (.081) <i>ULCI</i> (.714)
Total Effect	$c = (-.238), p = (.001)$. <i>LLCI</i> (-.352) <i>ULCI</i> (-.124)	$c = (-.549), p = (.055)$. <i>LLCI</i> (-1.110) <i>ULCI</i> (.012)	$c = (.324), p = (.100)$ <i>LLCI</i> (-.063) <i>ULCI</i> (.712)

It shows in Table 6-12 that in the three cases when consumers noticing price decreased, the purchase intentions and value fairness are more than the case when consumers noticing price increased. Consumers' likelihood of purchasing when the price decreases grows in the following order: was £/now £, now £, save £.

Table 6-12: Purchase Intention & Value Fairness of (Increased vs. Decreased)

Price Format	Noticing Differentiation	N	Value Fairness		Purchase Intention	
			Mean	SD	Mean	SD
Was £ /Now £	All samples	240	4.18	1.128	3.88	1.491
	Increase	33	3.98	1.260	3.92	1.633
	Decrease	92	4.43	1.166	4.25	1.551
Now £	All samples	240	3.81	1.194	3.30	1.538
	Increase	28	3.41	1.510	3.06	1.717
	Decrease	21	4.61	1.283	4.01	1.770
Save £	All samples	240	3.72	1.169	3.44	1.509
	Increase	47	3.55	1.271	3.29	1.480
	Decrease	58	3.65	1.173	3.46	1.474

Note that when noticing price differentiation is calculated including increased and decreased vs. did not notice change as categorical data (0,1), the results show there is a direct relationship between noticing price differentiation and purchase intentions. In other words, when consumers did not notice price differentiation, the relationship with purchase intentions be a statistically significant correlation, $p = .007$. Thus, this research accepted the hypotheses *H9a, H9b and H9*).

6.5. Summary of Findings

The empirical analyses helped clarify how monetary and non-monetary promotion influence the noticing price differentiation. The results are summarised in the following Table 6-13.

Table 6-13: Hypotheses Summary

Hypotheses	Approved	Sig.
<i>H5a</i> : Noticing price differentiation between ‘Was £ /Now £’ vs. ‘Now £.’	Support	$p = .001$
<i>H5b</i> : Noticing price differentiation between ‘Was £ /Now £’ vs. ‘Save £.’	Support	$p = .001$
<i>H5c</i> : Noticing price differentiation between ‘Save £’ vs. ‘Now £.’	Support	$p = .001$
<i>H6</i> : Noticing price differentiation between Seasonal vs. Non-Seasonal.	Not support	$p = .731$
<i>H7a</i> : Noticing price differentiation between high vs. low channel integration.	Not support	$p = .085$
<i>H7b</i> : Noticing price differentiation of the interaction (monetary promotion X non-monetary promotion X channel integration).	Support	$p = .001$
<i>H8a</i> : Noticing price differentiation between high vs. low expectation of lower price online.	Not support	$p = .752$
<i>H8b</i> : Noticing price differentiation of the interaction (monetary promotions X non-monetary promotions X high vs. low expectation of lower price online).	Support	$p = .001$
<i>H9a</i> : Noticing price differentiation has an indirect relationship with purchase intention through value fairness.	Support	Significant. In noticing price decrease.
<i>H9b</i> : Noticing price differentiation has an indirect relationship with purchase intention through quality relationship.	Support	Significant. In noticing price increase
<i>H9c</i> : Noticing price differentiation has an indirect relationship with purchase intention through promotional price attractiveness.	Support	Significant. In noticing price decrease

6.6. Chapter Summary

Chapter Six has described the design of study 2, including the method and scenarios used, procedures, measurements and the manipulation check. This was followed by data analysis and findings.

The purpose of study 2 was to seek to understand what type of promotion is more/less likely to make price differentiation noticeable. It investigated how participants in different groups notice price differentiation. Prospect theory holds that a deal can be framed as a gain or loss situation. This thesis argues that different types of monetary promotion have significant differences in their framing effects (was £/now £, now £ and save £).

This chapter has discussed the importance of prospect theory and how the framing effects of different conditions influence consumers. It has measured the effects of monetary promotions and non-monetary promotions on noticing price differentiation. It has investigated displaying both monetary promotions and non-monetary promotions in the same deal and the importance of high and low channel integration in noticing price differentiation. In addition, it has studied the importance of expectations of a lower price online and offline in noticing price differentiation and, finally, the impact of noticing price differentiation on purchase intentions.

The results of the experiment provide clear support for differences in the framing effects of ‘was £/now £,’ ‘now £’ and ‘save £.’ This analysis has found evidence that ‘was £/now £’ is perceived as a gain situation compared with other promotion presentation formats because it has an external reference price. There is a statistically significant difference between ‘was £/now £’ and ‘now £’ and ‘save £.’

From the results, it is clear that the ‘now £’ format is a loss situation because although the price has been reduced the consumer might consider the attendant monetary sacrifice to be a loss situation. There is a statistically significant difference in noticing price differentiation

between the 'now £' format and 'save £.' However, 'save £' is both a gain and a loss. A consumer might frame the price as a gain because of the amount reduced but that amount might not be enough to make a good deal; simultaneously, it may be considered a loss situation because of the sacrifice of money to purchase the product.

Therefore, one of the main findings of study 2 is that different monetary price promotional presentation formats influence noticing price differentiation. When 'was £/now £' is used, consumers perceive the price to be reduced but actually in the experiment the price was manipulated by increasing it 20%. The 'was £/now £' promotion presentation format, which has an external reference price, makes noticing a price decrease more likely. The 'save £' promotion presentation format makes noticing a price decrease less likely. There were also some important differences in noticing a price increase in the 'now £' promotion presentation format, which is considered a loss situation.

Previous research has found significant differences in deal framings. These match the current results when taking the framing effect into account as a loss or gain situation. There is limited research in the area of framing effects in terms of various promotional price presentation formats in the context of online-offline channel integration. Future research should consider investigating the effects of other monetary promotion formats on noticing price differentiation.

However, the non-monetary promotions considered in this research were seasonal and non-seasonal conditions. The study has assumed an influence of framing effects based on prospect theory. Although a statistically significant difference in noticing price differentiation between seasonal and non-seasonal promotions was expected, a significant difference was not found.

Previous studies show a significant difference between monetary and non-monetary promotions regarding their framing effects. The current study has investigated monetary and non-monetary promotions displayed together (i.e., a monetary promotion with a seasonal cue) as antecedent factors influencing noticing price differentiation.

This study has found evidence to support an interaction between monetary and non-monetary promotions in online price perceptions when there is channel integration. Future research should consider another semantic cue (e.g., daily discount) as a gain situation to understand whether it reduces noticing price differentiation. Prior research has compared monetary and non-monetary promotions but has not interacted them to understand how they impact on consumer perceptions of the deal. More studies are needed of how various monetary promotion formats interact with non-monetary promotions in real business practice. This could influence consumer perceptions of deals as gain and loss situations.

The study expected to find a mediating effect of consumer perceptions – including of value fairness, a quality relationship and promotional price attractiveness – in the indirect relationship between noticing price differentiation and purchase intentions. The results found that the relationship is fully mediated by value fairness, a quality relationship and promotional price effectiveness.

Chapter Seven: Thesis Discussion and Conclusion

7.1. Introduction

As the discussion at the beginning of this thesis showed, research on noticing price differentiation in multiple channels is important to enable retailers to set an optimal pricing strategy since many of them have switched to a multi-channel system and seek to improve their services in online and offline channels. Developing a pricing strategy in a particular market is considered one of the most important operational activities for any company (Shams-Shoaaee & Hassini, 2020). Multi-channel retailer price-setting is an under-researched area, despite the impact of setting optimal prices in both the online and offline channels. Whether a retailer should unify or differentiate the prices in the two channels is a controversial topic. However, it can be central to whether offline retailers survive in the marketplace (Homburg et al., 2019).

There are many factors retailers should consider when setting pricing strategies, such as company characteristics, the target market and competition (Shankar & Bolton, 2004). Pricing strategy includes determining the minimum price to quote for different market segments and forecasting prices for specific days and times to maximise profit (Adhikari et al., 2013; Guillet & Mohammed, 2015; Mattila & Gao, 2016; Tellis, 1986).

This chapter will summarise the literature review and the thesis's key findings, its theoretical and managerial contributions and its limitations. It will also make suggestions for future research. First, Chapter Seven will summarise the research gaps resulting from the literature review and how the thesis fills these gaps by answering the research questions. This will be followed by a section on the theoretical implication that results from extending just noticeable difference theory from a single channel into the context of multiple channels. The thesis has required a deep understanding of just noticeable difference theory and prospect theory in relation to noticing price differentiation in various situations. Its managerial contribution is

that it provides more understanding of what retailers should consider when integrating their channels and setting optimal prices in multiple channels. Finally, the limitations of the research design of the thesis will be discussed and as a result, future research direction will be suggested.

7.2. Summary of the Research and Key Findings

This thesis has identified several research gaps through an extensive overview of the previous literature. In order to bridge the research gaps identified, the thesis aimed to answer two research questions (1) how should optimal pricing be set for multiple channels that will make consumers more/less likely to notice price differentiation; (2) what types of price presentation format are more/less likely to make consumers notice price differentiation? The main goals of each research question are explained below.

The first question was further broken down into specific issues that so far have not been investigated by previous researchers. In study 1 these sub-questions were transformed into two main goals which are (1) identifying differential price thresholds affecting comparing online and offline prices for the same retailer and (2) investigating differences between noticing price differentiation when the regular price and when a promotional price is used in the same retailer's online and offline channels.

Prior studies have failed to address differential price thresholds in the context of multiple channels by comparing noticing price differentiation in the same retailer's online and offline channels, although differential price thresholds in a single offline channel have been investigated. (e.g., Cheng & Monroe, 2013a; Sirvanci, 1993). Empirical studies highlight that online prices do not necessarily match their offline counterparts. Many multi-channel retailers charge higher prices and offer fewer products online (Grewal et al., 2010), while some researchers find online prices are generally lower than offline ones (Pan et al., 2002; Ratchford et al., 2003). Therefore, the thesis has compared noticing price differentiation online and offline

at three price thresholds when the price increases, including when the price presentation uses the regular price or a promotional price, in order to investigate whether consumers notice price differentiation in different channels similarly or differently.

Study 1 surveyed multiple groups to answer the first research question. It used the just noticeable difference concept in comparing differential price thresholds online and offline. It found a statistically significant difference between noticing price differentiation in the regular price online and offline at the high-level threshold of 20%. In other words, when retailers increase a price online and offline by the same amount, consumers are more likely to notice regular price differentiation in the offline than the online channel at the 20% threshold. More interestingly, study 1 found that consumers are more likely to notice price differentiation in the regular price than in a promotional price. These findings led the thesis pursuit to conduct study 2 in order to understand why a price differentiation of promotional prices is less likely to be noticed.

To answer the second research question, study 2 had several goals that reflect sub-questions: (1) identifying the promotional price presentation formats that make consumers more/less likely to notice price differentiation among three formats (was £/now £; now £; save £). (2) understanding the effect of using seasonal cues together with monetary promotions in the context of online-offline channel integration. (3) investigating the mediating roles of consumer perceptions when noticing price increases and decreases in purchase intentions.

Based on the gain and loss situations proposed in prospect theory, previous studies have explored the framing effects of monetary and non-monetary promotions (e.g., Chang, 2018; Gal & Rucker, 2018; Higgins & Liberman, 2018; Morewedge & Giblin, 2015; Wang & Hazen, 2016). However, the antecedent factors influencing whether consumers are more likely to notice price differentiation in different promotion presentation formats (e.g., monetary promotions) in the context of channel integration have not been investigated. Therefore, by applying the

concept of prospect theory's gain and loss situations, this thesis expected consumers to be more likely to notice price differentiation in specific promotional presentation formats than in others.

Previous studies have also not investigated the antecedent factors influencing noticing price differentiation when seasonal and non-seasonal strategies are used together with monetary promotions, although many studies have investigated the importance of non-monetary promotions (e.g., buy one get one free and discount coupons) in terms of gain and loss perceptions and have compared price perceptions in monetary and non-monetary promotions (Lowe & Barnes, 2012; Ma'Ruf et al., 2019; Reid et al., 2015; Yi & Yoo, 2011). However, there is a dearth of studies on semantic cues in promotions (Sanchez-Franco et al., 2019; Sinha & Smith, 2000). Therefore, this thesis has investigated the interaction between using monetary and non-monetary promotions in the context of online-offline channel integration, as many multi-channel retailers use promotional prices with semantic cues that refer to discounts.

Prospect theory holds that different promotional price presentation formats affect price framing as loss or gain situations. In turn, when consumers perceive a gain situation, they are less likely to notice price differentiation. Therefore, study 2 combined just noticeable difference theory and prospect theory to understand differences in noticing differentiation in gain and loss situations resulting from different price promotion formats. It found statistically significant differences in noticing price differentiation among the above three different promotional price presentation formats and therefore the thesis supports the assumption that the more a deal is perceived as a gain situation the less price differentiation will be noticed. Study 2 found that price differentiation is less likely to be noticed when the promotion format uses an external reference price than when the other formats investigated are used.

Furthermore, the thesis found that using a non-monetary promotion together with a monetary promotion in the context of online-offline channel integration influences noticing price differentiation. Finally, it found that consumer perceptions work as mediators when

consumers notice price increases or decreases. It found that when consumers notice price differentiation, consumer perceptions of value fairness and a quality relationship mediate the effect on purchase intentions.

7.3. Theoretical Implication

This thesis has important contributions to theoretical knowledge that includes differential price thresholds in the multiple channels, the role of promotional price in noticing price differentiation, and the outcomes not only for the consumer perception but also the outcomes of purchase intention when consumer noticing price increase and decrease through the mediators factors perceive value fairness, quality relationship and promotional price attractiveness. Thus, this thesis has contribution of theoretical knowledge consists in explanations of how antecedent factors noticing price differentiation of different conditions, consumer perception of noticing price differentiation, and the outcomes when consumer noticing price differentiation in multiple channels context.

7.3.1. Differential Price Thresholds in Multiple Channels

Past studies have identified the fundamental features of price behaviour (Monroe, 1973). Behavioural pricing research deals with the psychology of consumer price perceptions, including evaluating and responding to price offers (Estelami & Maxwell, 2003). The novelty of this thesis lies in the fact that it has studied noticing price differentiation by applying the just noticeable difference theory at different price thresholds in multiple channels for the same product and the same retailer. Some studies have investigated price differences in online and offline channels (e.g., Fassnacht & Unterhuber, 2016; Flores & Sun, 2014) and a few studies have investigated noticing price differentiation in a single channel (Cheng & Monroe, 2013a; Sirvanci, 1993). However, multi-channel retailers can set different prices online and offline in a strategy of channel-based price differentiation.

Previous studies such as Fassnacht and Unterhuber (2016) and Uhl and Brown (1971) have investigated the effects of three price differentiation thresholds (5%, 10%, 15%). Hence, they identify that the low level of differential price thresholds in a single channel is 5%. However, the high level of noticing price differentiation in multi-channel is uncertain and there is a need to investigate a higher level of price differentiation when comparing online and offline channels. This thesis studied the high and low level of differential price threshold.

Recently, Vastani and Monroe (2019) argue that consumer buying behaviour does not change when the price differentiation is within 15% to 17% of competitors' prices. They seek to investigate differential price thresholds by using actual purchase data for grocery store prices. They demonstrate that at a benchmark of historical product prices decreasing by more than 23% the response of consumers is more positive. On the other hand, when there is a price increase of more than 15% the response of consumers to the price differentiation is more negative (Vastani & Monroe, 2019). Therefore, this thesis added to the knowledge that whether at 20% of the price increase is the high level of differential price thresholds that consumer will notice between online and offline compare with previous studies which only studied 15% of a single channel.

Consumers perceive online and offline price differently which often the online prices can easily compare with other online websites in the same moment. However, this thesis argues that when comparing the price of two different shopping time, the noticing of differentiation will be differed because the way of presenting the price online and offline differ. In online website often consumers can see a variety of products at the same time (e.g. 12 products) and in offline shopping consumers be able to see (e.g. three products) at the same time which will be more likely to notice price differentiation during different shopping times. Therefore, the just noticeable difference theory develops in this thesis to add to the knowledge that the high

level of difference between online and offline is 20% of price increase that more likely consumer notice the differences between channels for the same retailer.

Furthermore, the price presentation formats influence noticing price differentiation. This can be influenced by consumer perceptions of deals as gain and loss situations by using regular price and promotional price conditions to investigate how the gain and loss situation of high and low level of differential price thresholds impact of noticing differences. According to prospect theory, people perceive situations as gains or losses (Kahneman & Tversky, 1979). For instance, in the comparison between promotional price and regular price, this thesis adds to the knowledge that the regular price consumer more likely to notice price differentiation compare with the promotional price which perceives as a gain situation which leads to less likely to notice the differences.

7.3.2. Price Sensitivity and Reference Price Range

Price sensitivity and the reference price range influence noticing price differentiation (e.g., Cheng & Monroe, 2013a; Coulter, 2013; Han et al., 2001; Kalyanaram & Little, 1994; Monroe, 1973; Sirvanci, 1993; Vastani & Monroe, 2019). Where price sensitivity and reference price range can be perceived differently when using channel-based price differentiation. Consumers evaluate a current product price by relying on a reference price, which is the price that consumers assume from their previous experiences (Emery, 1970; Kalwani et al., 1990; Kalyanaram & Little, 1994; Krishnamurthi et al., 1992; Putler, 1992; Winer, 1986).

The thesis has assumed that price sensitivity and the reference price range may be significantly different in the same retailer's online and offline channels. For instance, prior studies have confirmed that price sensitivity differs from channel to channel (Chu et al., 2008; Wolk & Ebling, 2010). In the same vein, the reference price range is determined by both subjective and objective factors, including the initial product price and competitors' prices

(Monroe, Della Bitta, & Downey, 1977) which consumer might set a different reference price range for a different channel in the same retailer. Therefore, any price change outside the high and low thresholds of the acceptable price range may or may not be noticed. Although there is much literature on price sensitivity and the reference price range in either the online or offline context, this thesis has compared the online and offline channels of the same retailer.

Thus, the novelty of this thesis to understand whether price sensitivity in the online and offline channel is the same and which channel that consumer will be more sensitive when shopping. Also, whether the wide of the reference price range is same or different when shopping online and offline for the same retailer. This thesis added to the knowledge that consumers be more sensitive to price online than offline and there are no differences in reference price range when shopping online or offline for the same retailer. The results of the thesis make it clear that there are significant differences of price sensitivity where consumer have more price sensitivity online than an offline channel for the same retailer which match the results of previous studies who investigate the online and offline context. However, by identifying the reference price range, this thesis has found that there is no significant difference between the online and offline channels for the same retailer. A popular explanation is that the reference price range for a product is similar online and offline. For example, if a consumer has a reference price range for a jacket (e.g., £15-£30) this remains the same whether he/she shops in online or offline stores.

7.3.3. Promotional Formats in Noticing Price Differentiation

There is little research in this area of the framing effects of various promotional price presentation formats in online-offline channel integration. Previous studies have compared monetary and non-monetary promotions but have not investigated how their presentation format influences consumer perceptions of the deal. Although previous studies have investigated the framing effects of monetary and non-monetary promotions, there is a lack of

studies regarding noticing price differentiation. Previous studies show that non-monetary promotions – such as coupons, bundling and buy one get one free – can influence consumers to perceive a deal as a gain situation. Studies have investigated the effects of displaying semantic cues in non-monetary promotions such as indications of temporal discounts (e.g., daily discount, time-limited discount and discount while stocks last). More studies are needed of how various monetary promotion formats interact with non-monetary ones in real business practice.

This thesis assumed that there are important antecedent factors which influence consumers' perceptions of deals as gain or loss situations. In a gain situation, consumers are less likely to notice price differentiation and in a loss situation more likely. This thesis applied a combination of the two theories by using three formats of promotional prices to understand why price differentiation is less likely to be noticed when a promotional price is used than the regular price. Also, how the seasonal condition influence consumer to perceive the deal as gain situation compares with the non-seasonal condition as loss situation.

The novelty of this thesis lies in the fact that different promotional price formats result in different perceptions when consumers notice price differentiation due to prospect theory's concept of gain and loss situations. Monetary promotions often influence consumers to perceive the deal as a gain situation. However, prior research has compared different promotional presentation formats and found that they have different framing effects. For example, different discount formats (e.g., 5% and £5) have different framing effects (e.g., Berkowitz & Walton, 1980; Chen et al., 1998; DelVecchio et al., 2007; Drechsler et al., 2017; Gamliel & Herstein, 2012; Grewal et al., 1996; McKechnie et al., 2012; Mishra & Mishra, 2011). Previous studies have found that the use of an external reference price (i.e., was £/now £) can be considered a gain situation more than other formats.

A contribution of this thesis is the finding that statistically significant differences in noticing price differentiation result from three different presentation formats of monetary

promotions with the same amount of discount. The three formats (was £/now £; now £; save £) are perceived differently. The format most perceived as a gain situation is 'was £/now £,' followed by 'save £' and then 'now £.' This is for the following reasons. An external reference price (was £/now £) shows consumers how much the price was and how much they will gain from the deal. This makes consumers less likely to notice price differentiation. 'Save £' is also perceived as a gain but when a retailer shows exactly how much money is saved it is sometimes not enough for consumers to perceive it completely as a gain situation so they are more likely to notice price differentiation. Finally, 'now £' is perceived as a loss situation because it focuses on the money sacrificed to purchase the product. In contrast, when using seasonal cues as non-monetary promotion as proposed in this thesis as gain situation compares with the non-seasonal condition, both conditions receive as gain situation which means the monetary promotions have strong effect on perceiving the gain situation. Therefore, this research adds to the knowledge that the non-monetary promotion did not influence consumer noticing price differentiation.

7.3.4. The Influence of Channel Integration

Channel integration influence transactions value (e.g. Verhoef et al., 2015). Previous studies mention that channel integration reduce consumer risk (e.g. Akturk et al., 2018; Herhausen et al., 2015). However, there is a lack of knowledge on how the channel integration influence on noticing price differentiation. By applying the concept of gain and loss situation of prospect theory, the high channel integration supposed to perceive gain situation because can return the product any time anywhere without restrictions. However, there is some restriction of return the product in low channel integration. This thesis assumed that high channel integration influence consumer to notice price differentiation.

The current theses contribute to knowledge that in both conditions of high and low channel integration consumer more likely to perceive the deal as gain situation. Therefore, the compare high and low channel integration did not have significant differences in noticing price

differences. This thesis suggests that monetary promotion has a strong influence in to perceive the deal as gain situation.

7.3.5. Consumer Perception of Noticing Price Differentiation

The originality of this thesis lies in the understanding it provides of the outcomes of noticing price differentiation and how just noticeable differences influence consumer perceptions in the context of multi-channel retailers. Study 1 of this thesis investigated consumer perceptions of price fairness and value. In Vogel and Paul's (2015) conceptual framework there is a mediating relationship between perceiving channel-based price differentiation instruments and consumer perceptions. This thesis has used channel-based price differentiation to measure noticing price differentiation.

Channel-based price differentiation can lead to some issues for the retailer regarding perceived price fairness and perceived price value. Some consumers perceive that differentiation between online and offline prices is unfair (Homburg et al., 2019; Li, Gordon, & Netzer, 2018; Vogel & Paul, 2015). Recent research has found a significant difference between online and offline channel perceptions, including acceptance of higher and lower prices in different channels (Homburg et al., 2019). Homburg and colleagues investigated price differentiation in the light of price fairness theory, which holds that price differentiation can “cause fairness problems” (Homburg et al., 2019; Li, et al., 2018).

The price offered and the rationale for the price may lead consumers to perceive unfairness (Xia et al., 2004), with negative consequences such as dissatisfaction or complaints. However, it is more difficult for consumers to assess whether a policy is fair or not (Bolton et al., 2003). A recent study argues that previous studies have concentrated on the across-channel effects of advertising but have neglected the across-channel effects of pricing (Homburg et al., 2019). Homburg et al. (2019) focus on the effects of prices online and offline as multiple

channels. They suggest that future research should investigate further across-channel effects (e.g., how consumers compare offline and online prices and how they perceive price differences between offline and online channels).

The new insight into price behaviour perception in this thesis is that consumer perceptions in the same retailer's online and offline channels differ. The perceptions investigated have been those of price fairness and price value. The findings confirm that consumers perceive price fairness and value significantly differently online and offline when they notice price differentiation. Xia et al. (2004) state that the cognitive aspects of price fairness judgments involve comparing a price or procedure with a pertinent standard, reference or norm. Price fairness is subjective and is usually studied from the buyer's perspective (Xia et al., 2004). This means that many consumers try to maximise their outcome by paying a lower price compared with other options (Oliver & Swan, 1989). The implications of these findings have been discussed in other studies, which suggest that one of the key challenges in setting different prices offline and online is perceived price fairness. (e.g., Campbell, 1999a; Kahneman et al., 1986a, 1986b). Homburg et al. (2019) argue that price differentiation between channels affects consumer reactions to prices, which affect company profits.

7.3.6. The Mediating Role of Consumer Perceptions in Purchase Intention

Purchase intentions are positively associated with price perceptions (Munnukka, 2008). Recent studies have shown that the magnitude of a discount influences purchase intentions. The small magnitude of discount does not influence purchase intentions as much as bigger discounts (Sheehan et al., 2019). Similarly, this thesis has experimentally investigated the effect of monetary promotions on purchase intentions when consumers notice price differences at the high level of differential price thresholds through the mediating of consumer perceptions. Previous studies investigate the relationship of consumer perceptions on purchase intentions include perceived price value, price fairness, quality relationship (Vogel & Paul, 2015), and

promotion price attractiveness (e.g. Menon et al., 2016; Shiv et al., 2005). However, a previous study by Sheehan et al. (2019) who examine the consumer reactions to price discounts does not investigate the mediating of a quality relationship with the retailer.

This thesis added to knowledge in the context of online-offline channel integration by finding that noticing price differentiation influences purchase intentions when the retailers use promotional prices. The factors mediating the relationship between noticing price differentiation and purchase intentions are value fairness, a quality relationship and promotional price attractiveness. The finding of this thesis is that mediation depends on whether consumers notice price differentiation when the price increases or decreases. The results suggest that when consumers notice the price decreased, it influences purchase intention through the perceived value fairness and promotional price attractiveness. On the other side, when consumers notice that the price is increased, it influences the purchase intention through the quality relationship with the retailer.

7.4. Managerial Contribution

The results of this thesis support managers in pricing strategy decisions on whether to use channel-based price differentiation or the same price. The thesis has measured noticing price differentiation by asking respondents direct questions about whether or not price differentiation is noticeable under various conditions. It has also used a scale measurement to understand more deeply whether the participants noticed that the price decreased, increased or they did not notice the differentiation. The results of the thesis have important implications for managers who plan to apply channel-based price differentiation or set the same prices across channels to influence consumer perceptions and purchase intentions and make it less noticeable if the price has been increased. Retailers often seek to increase their profits by increasing their prices. Marn, Roegner, and Zawada (2003) report that a 1 per cent price increase can result in an 8 per cent improvement in profits.

Many theorists acknowledge that channel-based price differentiation is a healthy competitive practice which can increase profits (Yan, 2008; Yoo & Lee, 2010; Zettelmeyer, 2000; Zhang, 2009). However, many marketers worry about highlighting price differentiation to consumers for fear of negative consumer reactions and so they keep prices the same across different channels (Fassnacht & Unterhuber, 2016; Pan et al., 2004). The choice of a channel-based price differentiation strategy depends on the extent to which consumers accept price differences between online and offline channels. Some researchers doubt the effectiveness of setting different prices across channels (Neslin & Shankar, 2009) because consumers might perceive the price differentiation as inconsistent and therefore unfair (Homburg et al., 2019; Li, et al., 2018).

In the following subsections will illustrate how managers can benefit of understanding low and high level of differential price thresholds, the impact of monetary and non-monetary of a noticeable difference, the important role of mediating of channel integration and expecting lower price online, and the mediators of consumer perception on purchase intention when consumer noticing price differences.

7.4.1. Low vs. High Level of Differential Price Thresholds

A just noticeable difference in prices happens when a price change reaches a certain threshold. This thesis has compared noticing price differentiation online and offline of three levels of differential price thresholds which are low level (5%), middle level (10%) and high level (20%). There is a price threshold at which consumers are more likely to notice price differentiation in the online and offline channels. This implies that consumers faced with a 5% price change already notice price differentiation. The novelty of this thesis to investigate the high level of noticing price differentiation in multi-channel retailer and the important of using promotional price versus the regular price of the three differential price thresholds.

The present thesis has found that when there is a 20% price increase, consumers are more likely to notice price differentiation when comparing the online and offline channels. Therefore, the thesis suggests that when retailers use channel-based price differentiation they should set the difference in prices below 20% to make increased prices in an online channel less noticeable than in the offline channel. Previous research has suggested that when a retailer sets the price in its online store closest to the price in the offline channel it may be able to reduce price competition with its online-only competitors and charge higher prices offline.

Moreover, a key managerial contribution of the thesis is that it provides multi-channel retailers with information that may help them realise that they should not only care about the level of the price. One of the goals of study 1 was to understand the differences between the regular price and a promotional price using the concept of gain and loss in prospect theory. A promotional price is perceived as a gain situation and the regular price as a loss situation. Therefore, price differentiation is less likely to be noticed when there is a promotional price than when there is the regular price. The results support this assumption. Therefore, managers who would like to increase a price should use a promotional price (e.g. external reference price) during the price increase to make it less likely that price differentiation will be noticed.

The thesis has established the importance of taking into consideration just noticeable difference theory when setting a price strategy across channels to maximise value for both consumers and retailers. It suggests that when multi-channel retailers use channel-based price differentiation they can increase the price in the offline channel more than in the online channel. This increasing no more than 20% in offline more than online because when consumers notice a price increase, they perceive price fairness and value in the same retailer's offline channel more than in the online channel. Therefore, managers should consider this phenomenon and try to set the price differentiation between online and offline channels below the high level of price threshold of 20%.

7.4.2. Impact of Different Promotion Formats on Noticing Price Differentiation

The conceptual development and the empirical findings of this work provide suggestions for managers regarding the framing effect of different promotions formats. This thesis assumes that the monetary and non-monetary promotions influence noticing price differentiation in the context of online-offline channel integration. In terms of monetary promotions, it used three different promotional price formats which are ‘was £/now £,’ ‘now £’ and ‘save £.’ The non-monetary promotion used seasonal and non-seasonal conditions.

First, there are statistically significant differences in noticing price differentiation when different monetary promotion formats are used. The three promotional presentation formats used in study 2 were ‘was £/now £,’ ‘now £’ and ‘save £.’ The experimental results demonstrate that price differentiation is most noticeable in the ‘now £’ format. By contrast, it is less noticeable in the ‘was £/now £’ format, which is also called an external reference price. These differences are explained by the concepts of gain and loss in prospect theory. The results demonstrate that there are significant differences between the format of ‘was £/now £’ and ‘now£’ in perceiving value fairness, quality relationship, promotional price attractiveness, and purchase intentions. Similarly, the result finds the significant differences of these variables when comparing ‘was £/now £’ and ‘save £.’ Where ‘Save £’ and ‘Now’ formats there are no statistically significant differences of perceiving those variables.

Therefore, this thesis adds to practical knowledge that when managers want to attract consumers to make them more noticeable in the price discount, they can use the format of ‘Now’ or ‘Save £’, and when managers try to hide the increase in price, this thesis suggests to use ‘was £/now £’ formats as an external reference price to perceive the deal as gain which consumers are less likely to notice price differences.

Second, non-monetary promotions by using seasonal versus non-seasonal in noticing price differentiation, the results illustrate there is no statistically significant difference. Where the deal in both conditions perceives as gain situation. This means although the seasonal signal influences the framing effect of the deal, but it did not influence a consumer to less likely notice differences because the monetary promotions have the greater effect in perceiving gain situation which leads to notice differences in price. Hence, the managers can use a seasonal signal of reduce the price but should concentrate more in promotional price formats.

7.4.3. The Moderating Role of Channel Integration and Price Expectations

Without doubt using similar price in different channels can be beneficial for retailers in terms delivery services of in store pick up and return so often high channel integration has free delivery and free return. The assumption of this thesis was that there are significant differences in noticing price differentiation between high and low channel integration, but the results did not find statistically significant differences. In both conditions of high and low channel integration consumer perceive gain situation which means the consumers noticing that the price is decreased.

Regarding of moderating effect of channel integration, the results of this thesis confirm that the interaction effect of the three conditions which are monetary promotion, non-monetary promotion, and channel integration have a statistically significant effect of noticing price differentiation. This research helps the managers and marketers of understanding how low and high channel integration can influence consumers to less likely to notice price differentiation when dealing with high online-offline channel integration when using monetary and non-monetary promotions in the same deal.

In terms of moderating effect of expectation of lower price online, there results found also there are moderating effect of expectation lower price online when using monetary and non-monetary promotions in the same deal. This thesis suggested that the high level of

expectation lower price online moderate the relationship under certain conditions of using price promotion with a seasonal cue to less likely to notice price differentiation. To sum up, when the consumers have a high level of expecting lower price, they are less likely to notice price differentiation when purchasing a product during the seasons with promotion prices.

7.4.4. Mediator Effect of Consumer Perceptions on Purchase Intention

The novelty of this thesis that the purchase intentions are impacted by whether consumers are noticing price differentiation has increased or decreased from the original price. The assumption of this thesis that the influences of noticing price differentiation on purchase intentions are mediated by three consumer-perception variables: perceptions of value fairness, a quality relationship and promotional price attractiveness. The study found that the indirect relationship between noticing price differentiation and purchase intentions is fully mediated by perceptions of value fairness, a quality relationship and promotional price attractiveness.

The thesis suggests that if the consumer noticed that a price has increased, there is an indirect relationship between noticing price differentiation and purchase intentions through the mediating quality relationship with retailer. However, in the case that it is noticed that a price has decreased, there is an indirect relationship between noticing price differentiation and purchase intentions through the value fairness and promotional price attractiveness mediator variables. Hence, managers should consider the consequences when consumer noticing price differentiation and what cause the consumers to more/less likely noticing price differentiation by setting optimal price and using proper promotional price formats in their different distribution channels.

7.5. Limitations and Future Research

Despite these novel insights, some limitations of the thesis need to be addressed. These also indicate paths for future research. In the following there are three important limitations include the way of collect data, and product category that used in the thesis, and other promotions formats.

The first limitation of this thesis is the way of collecting data. The thesis collected the data from the online platform and not collected from the offline store to make sure the participants concentrate during the scenario on the product prices and the way of presenting each channel to avoid the distraction of physical store as mentioned early under the subsection of the data collection in this thesis see, pg. 128. It considers the online and offline channels – a physical store and an online website store – as the main channels for the multi-channel retailer to ensure realistic scenarios. When design and collect the data, the thesis considers the way of presenting the online and offline scenarios differently by introducing the products differently to the participants which match the reality of the physical and virtual environment of the channels in real shopping practices.

Therefore, future studies should consider collecting data not only from the physical store and online store but should consider other important distribution channels such as apps and catalogues. Current trends reveal that consumers engage in ‘showrooming,’ in which they shift actual purchases from the offline to the online channel (e.g., Homburg et al., 2019; Rapp, Baker, Bachrach, Ogilvie, & Beitelspacher, 2015; Verhoef et al., 2015), a behaviour that has become increasingly facilitated by apps in recent years (Mohammed, 2017). Thus, Fernández, Pérez and Vázquez-Casielles (2018) and Flavián, Gurrea and Orús (2020) suggest that webrooming and showrooming should be investigated in future studies. These could provide important results for multi-channel retailers as some consumers use both online and offline channels in their purchasing processes.

The second limitation is the product category used in the analyses was a shirt. Clothes are especially suitable for an initial investigation of the effects of monetary and non-monetary promotion on noticing price differentiation. A white shirt is also suitable to understand how consumers notice price differentiation at three price thresholds when retailers use a channel-based price differentiation strategy. Clothes constitute a major part of the home shopping business. Customers stay informed about the latest trends by using the internet and many people regularly purchase even high-priced clothes online. Therefore, it is reasonable for this thesis to have focused on fast fashion clothes. However, the product type is likely to moderate the effects of integrated online-offline channels. Future research expanding the focus from fast fashion apparel to different product categories or services might produce fruitful additions to the findings of this study (e.g., electronic devices or airline tickets).

A third limitation regards the formats used in monetary and non-monetary promotions. Previous research has found that there are significant differences in the results of deal framings. These match the current results when taking framing effects into account framing deals as loss and gain situations. The empirical findings suggest that monetary promotions generally increase perceptions of a gain situation and simultaneously decrease noticing price differentiation. The current research suggests that future research should investigate the effects of other monetary promotion formats on noticing price differentiation and consider other semantic cues such as a daily discount that might be perceived as gain situations to reduce noticing price differentiation.

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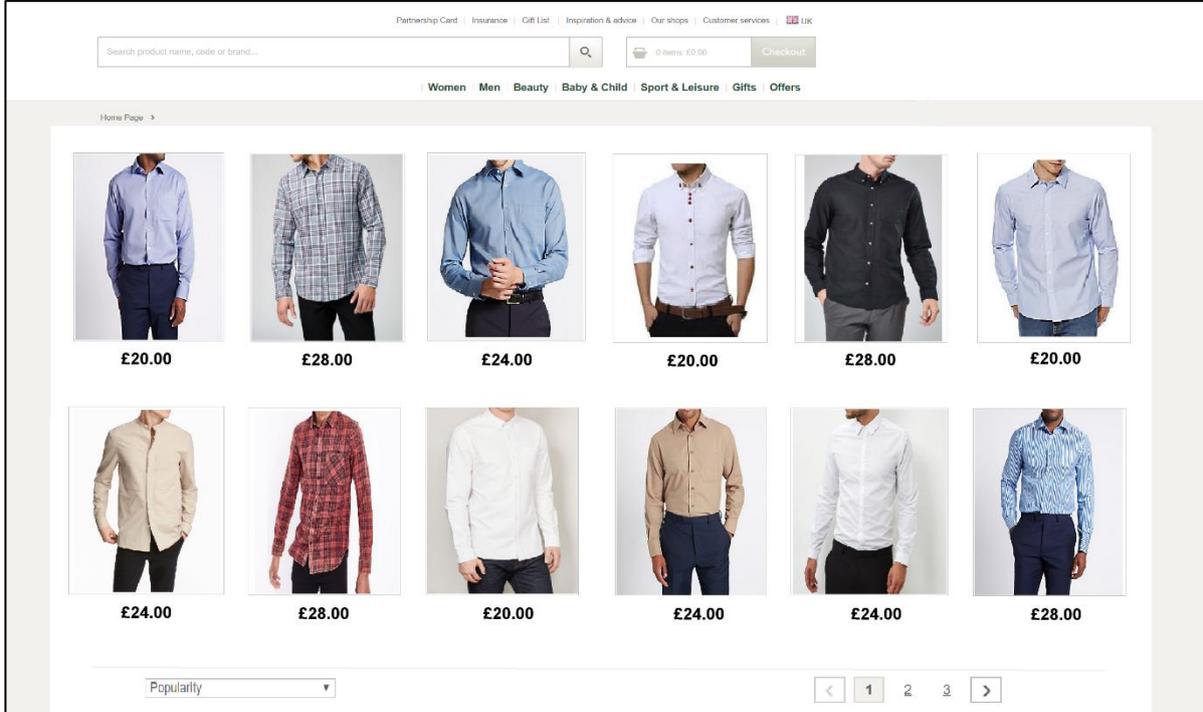
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Appendix

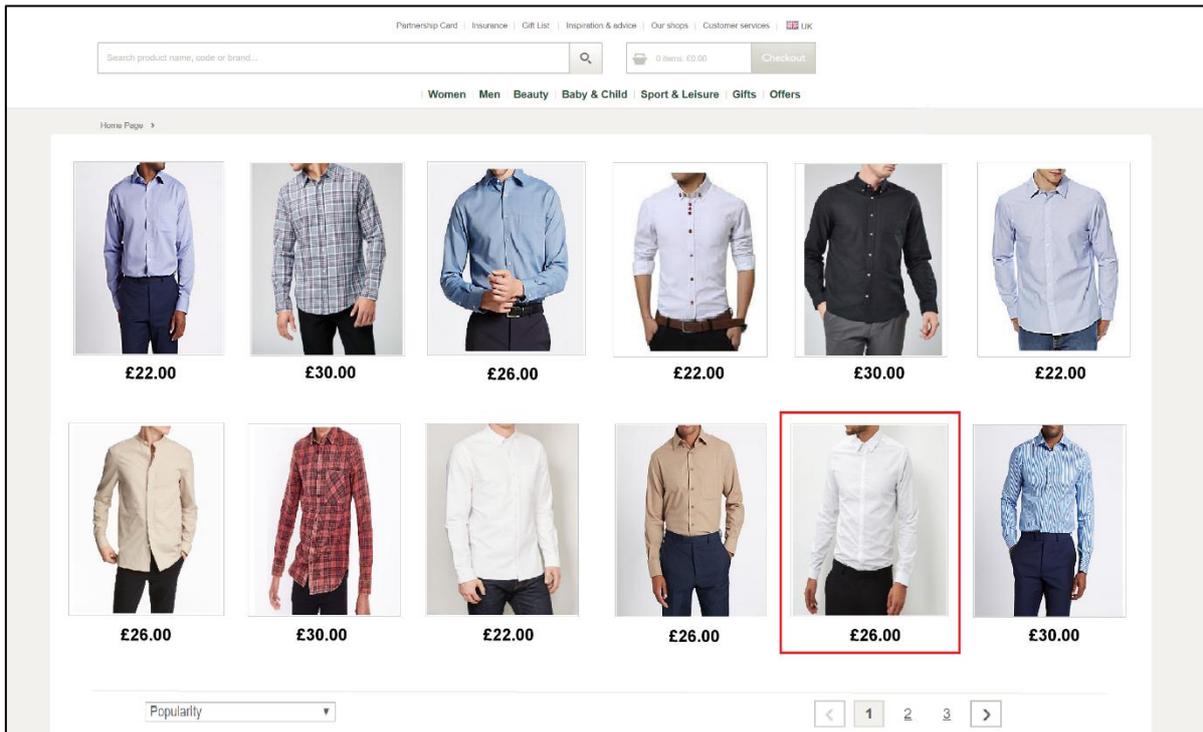
Study 1

(1) Exemplary Screenshots of the Online Channel Renderings. Baseline Prices for Men.

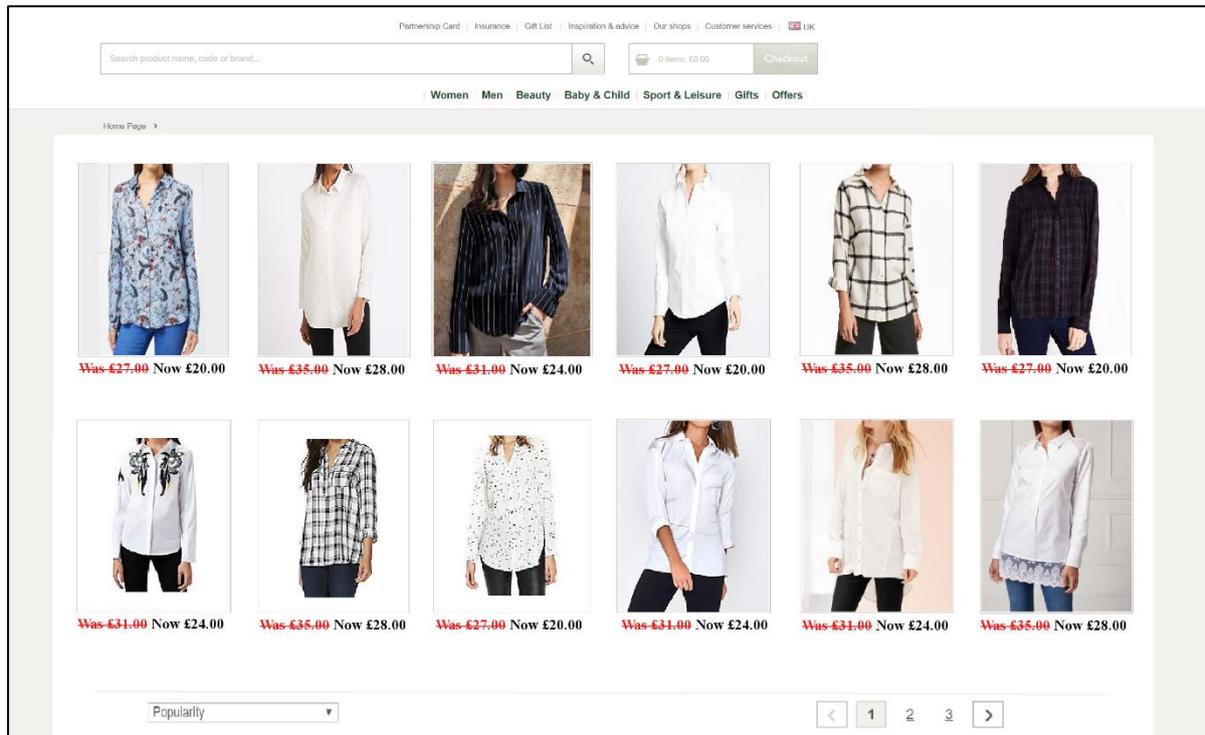
Non-Promotion:



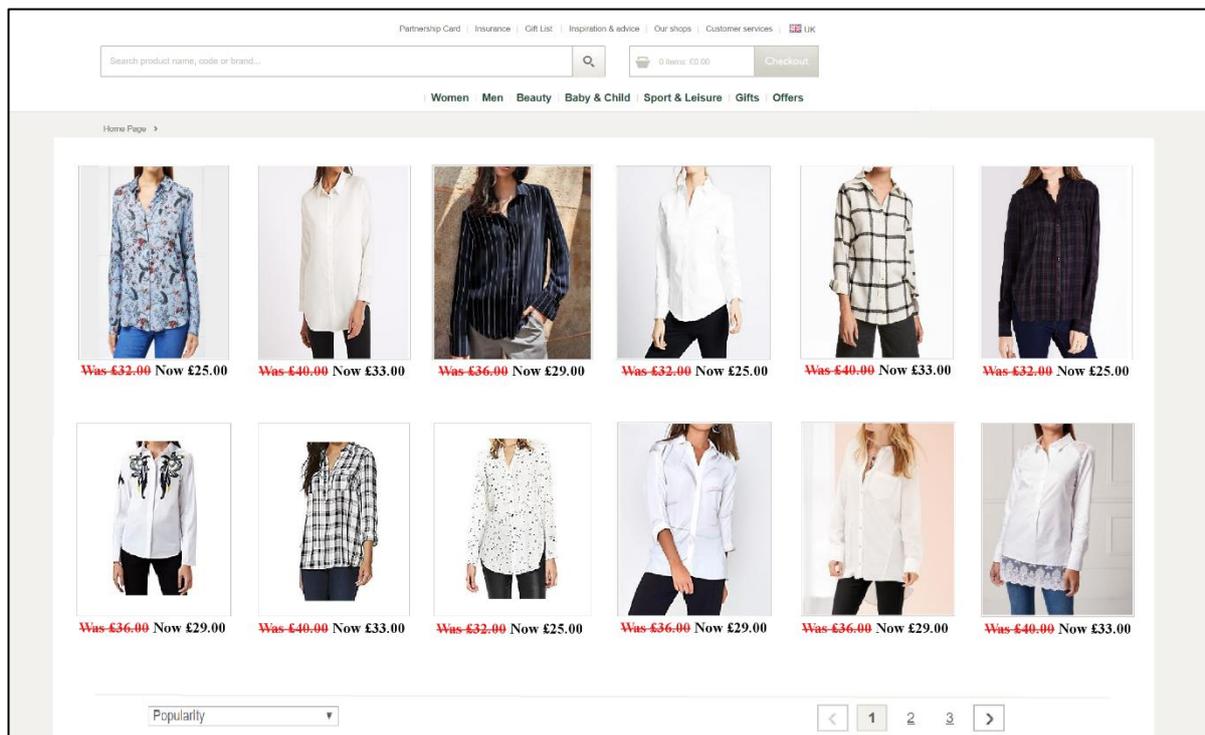
(2) Exemplary Screenshots of the Online Channel Renderings. Manipulated Prices for Men. Non-Promotion:



(3) Exemplary Screenshots of the Online Channel Renderings. Baseline Prices for Women. Promotion:



(4) Exemplary Screenshots of the Online Channel Renderings. Manipulated Prices for Women. Promotion:



(5) Exemplary Screenshots of the Offline Channel Renderings. Baseline Prices for Men.

Promotion:

 <p>Was £27.00 Now £20.00</p>	 <p>Was £35.00 Now £28.00</p>	 <p>Was £27.00 Now £20.00</p>
 <p>Was £31.00 Now £24.00</p>	 <p>Was £31.00 Now £24.00</p>	 <p>Was £35.00 Now £28.00</p>
 <p>Was £27.00 Now £20.00</p>	 <p>Was £35.00 Now £28.00</p>	 <p>Was £31.00 Now £24.00</p>
 <p>Was £31.00 Now £24.00</p>	 <p>Was £35.00 Now £28.00</p>	 <p>Was £27.00 Now £20.00</p>

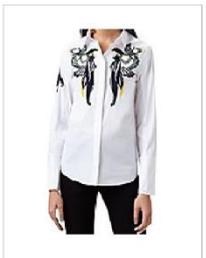
(6) Exemplary Screenshots of the Offline Channel Renderings. Manipulated Prices for Men. Promotion:

 <p>Was £28.00 Now £21.00</p>	 <p>Was £36.00 Now £29.00</p>	 <p>Was £28.00 Now £21.00</p>
 <p>Was £32.00 Now £25.00</p>	 <p>Was £32.00 Now £25.00</p>	 <p>Was £36.00 Now £29.00</p>
 <p>Was £28.00 Now £21.00</p>	 <p>Was £36.00 Now £29.00</p>	 <p>Was £32.00 Now £25.00</p>
 <p>Was £32.00 Now £25.00</p>	 <p>Was £36.00 Now £29.00</p>	 <p>Was £28.00 Now £21.00</p>

(7) Exemplary Screenshots of the Offline Channel Renderings. Baseline Prices for Women. Non-Promotion:

 <p>£20.00</p>	 <p>£28.00</p>	 <p>£20.00</p>
 <p>£24.00</p>	 <p>£24.00</p>	 <p>£28.00</p>
 <p>£20.00</p>	 <p>£28.00</p>	 <p>£24.00</p>
 <p>£24.00</p>	 <p>£28.00</p>	 <p>£20.00</p>

(8) Exemplary Screenshots of the Offline Channel Renderings. Manipulated Prices for Women. Non-Promotion:

 <p>£22.00</p>	 <p>£30.00</p>	 <p>£22.00</p>
 <p>£26.00</p>	 <p>£26.00</p>	 <p>£30.00</p>
 <p>£22.00</p>	 <p>£30.00</p>	 <p>£26.00</p>
 <p>£26.00</p>	 <p>£30.00</p>	 <p>£22.00</p>

(9) Selected Item of the Manipulated Prices for Men. Promotion:



~~Was £36.00~~ Now £29.00

(10) Selected Item of the Manipulated Prices for Women. Non-Promotion:



£25.00

(A) Survey of Study 1

Before asking to participate in this study, we have two questions to determine if you are eligible to participate.

Have you ever purchased clothes from the shopping malls in the United Kingdom?

- Yes No

Have you ever purchased clothes over the internet?

- Yes No

NEXT

Dear Participant,

Thank you in advance for your participation in this study. The aim of this study is to understand how a consumer feels about the prices of fashion items in multiple channel retailers. This study is part of my doctoral research.

Your answers will be used only for academic purposes and will be treated with complete confidentiality. You are free to withdraw at any time without giving a reason.

If you agree to participate in the study, it will take about 10 minutes to complete the survey.

I consent to the publication of study results as long as the information is anonymous so that no identification of participants can be made. I have read and understood the explanation and I voluntarily consent to participate in this study.

Do you agree to participate in the study?

- Yes No

NEXT

What is your gender?

- Male Female

What age group do you belong to?

- 18-25
 26-35
 36-50
 51-70
 71+

NEXT

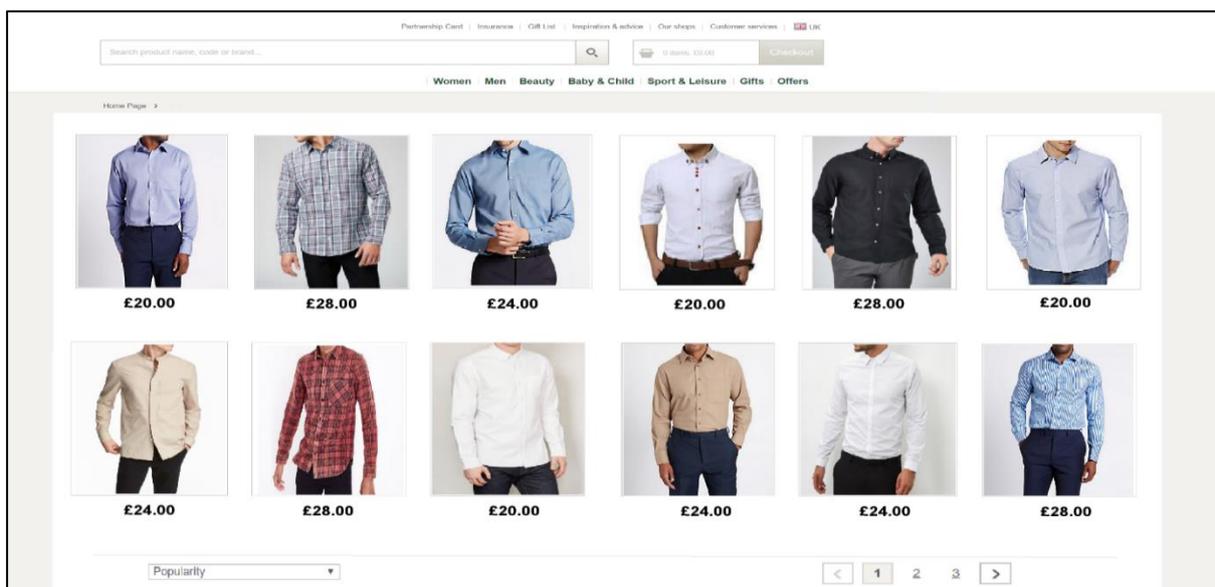
Imagine that you are shopping on a retailer's website/ in a physical store looking for shirts from one of the most popular retailers in the UK. You are in your favorite retailer and you are satisfied with the quality. You are looking for shirts and you see several styles with varying prices. The retailer provides a regular/ promotion price as shown on the next page:



Note:

You will have 60 seconds to have a look at the products, then the system will proceed to the next part.

NEXT



At this time, you have not decided to commit to the purchase. You are still looking around and thinking about it.

Please, click <NEXT> to continue.

NEXT

How often do you do shop online/ in physical store for clothes? (select which best describes you).

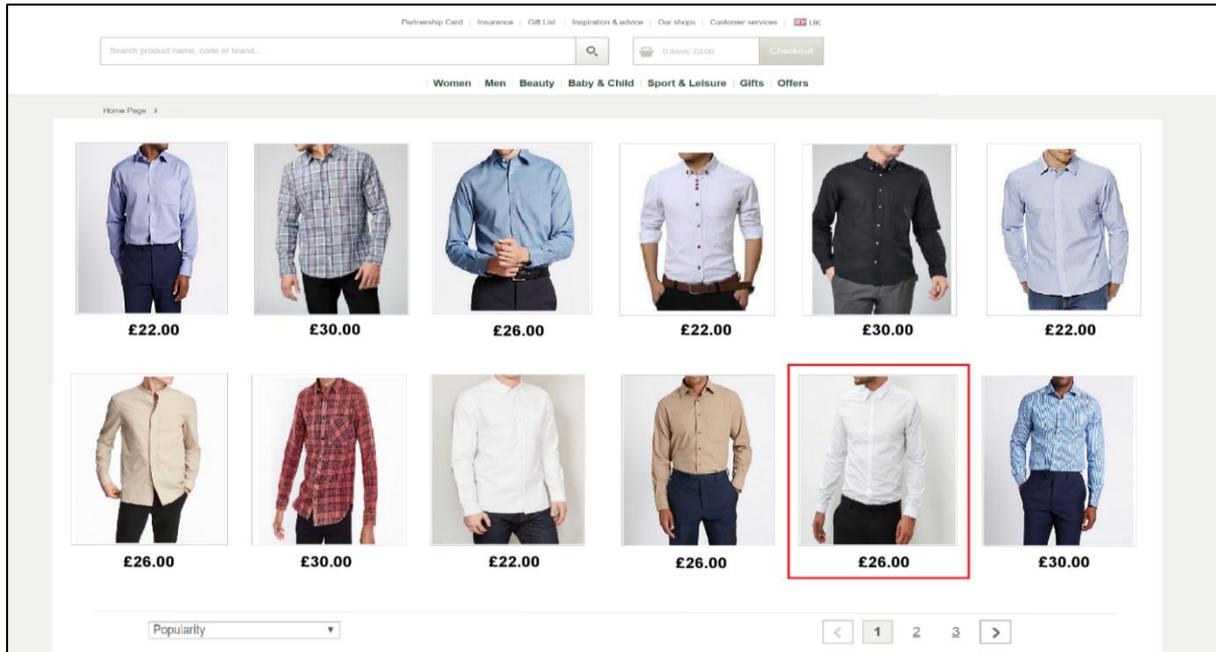
- Weekly
- 2-3 times per month
- Monthly
- Every three months
- Less often

How long do you spend on online shopping/ in the physical store each time?

- Less than 30 mins
- Less than 1 hour
- Less than an hour and half
- Less than 2 hours
- More than 2 hours

NEXT

After a few days, you go to the same physical store/ research online to look for shirts again, but you really like the one you saw before. You walk to the same section as before/ reopened the retailer’s website on the same page as your previous shopping. You see the following shirts:



Did you notice any difference in price between the current price and the previous shopping prices?

- Yes
- No

NEXT

While you are in the physical store/ online store, please answer each of the following questions based on your real shopping behaviour.

I am willing to make an extra effort to buy low price items of clothes. (agree/ disagree)

I will change what I planned on buying in order to take advantage of a lower price for clothes. (agree/ disagree)

I am sensitive to the change in clothing prices. (agree/ disagree)

The price I notice in a store is very important to my choices. (important/ not important)

I often choose a product on the basis of the price offer while shopping. (important/ not important)

I often check the price of a shirt while buying. (important/ not important)

NEXT



The current price of the above product is £26.00. Please, select one of the following options to evaluate the shirt price.

- The most acceptable price
- Lowest price acceptable
- Highest price acceptable
- Unacceptable price too cheap
- Unacceptable price too expensive

NEXT

How much do you normally pay for a white plain shirt? (...)

NEXT

If you noticed that the price increased by £2 since the last time you had shopped (the price was £24 and became £26), what would be your answer be to the following statements based on the undernoted scale (agree/ disagree):

- The shirt is reasonably priced.
- The shirt is good value for the money.
- At the current price, the shirt provides good value.
- At the price shown the shirt is a very economical.
- The shirt is considered to be a good buy.
- The price shown for the shirt is a very acceptable.
- The shirt appears to be a bargain.
- Increasing the price of the shirt is fair.
- Increasing the price of the shirt is justifiable.
- Increasing the price of the shirt is reasonable.

NEXT

We would like to ask you about the price range you would be willing to pay for a similar shirt to the previous page. There is no right or wrong answer. Please answer based on your experience and what you consider an acceptable price in your mind.

Your willingness to pay for a plain shirt is:

The currency is £

	0	10	20	30	40	50	60	70	80	90	100
Lowest Price											
Highest Price											

NEXT

Finally, we would like to know more about you. Please provide the following information about yourself:

What is the highest level of education you have completed?

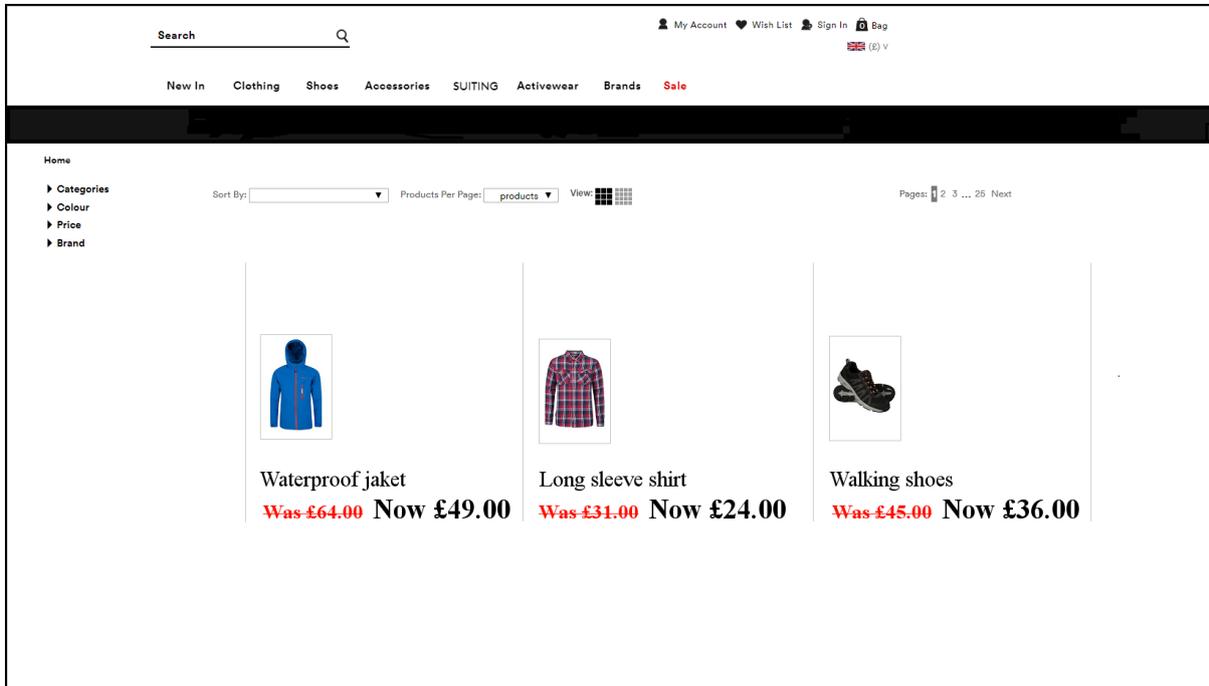
- High school or equivalent
- Some college
- Bachelor's degree
- Master's degree
- Doctoral degree
- Other

Please, indicate your current monthly income after tax:

- Less than £1000
- £1000 to £1500
- £1501 to £2000
- £2001 to £2500
- £2501 to £3500
- £3501 to £4000
- ≤ £4001

Study 2

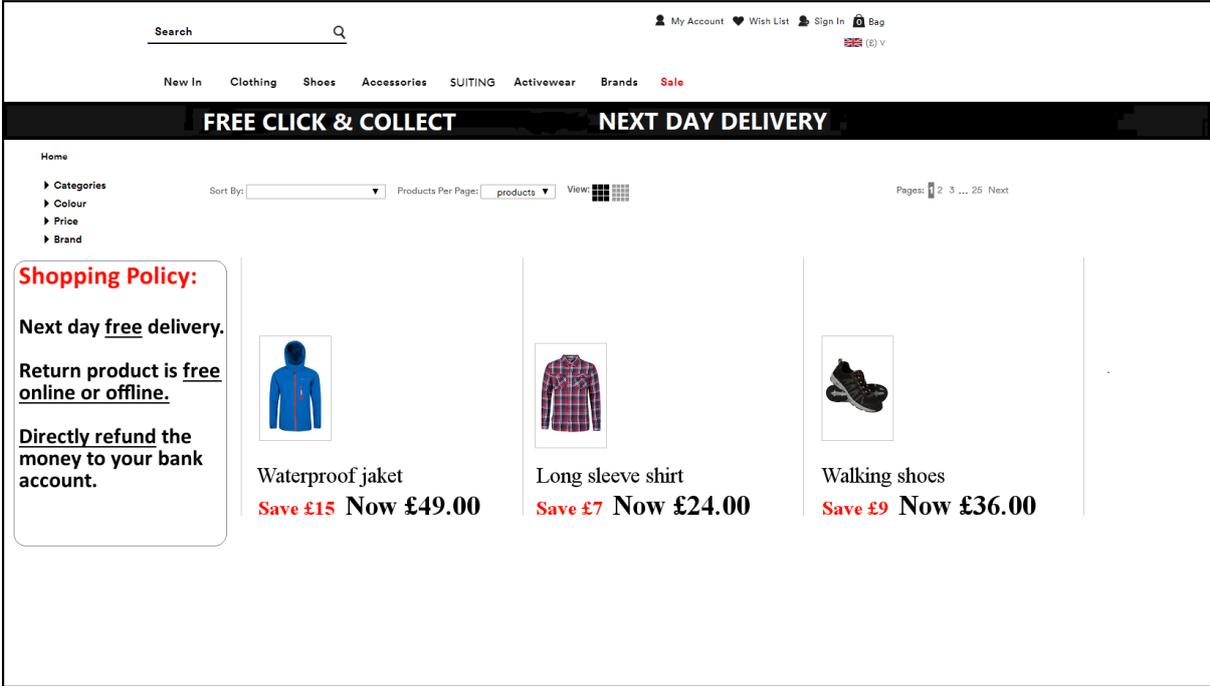
(11) Exemplary Screenshots of the Low Channel Integration. Baseline Price with Promotion Presentation Formats (Was £ /Now £):



(12) Exemplary Screenshots of the Shirt Manipulated Price with Promotion Presentation Formats (Was £/Now £):



(13) Exemplary Screenshots of the High Channel Integration. Baseline Price with Promotion Presentation Formats (Save £):



(14) Exemplary Screenshots of the Shirt Manipulated Price with Promotion Presentation Formats (Save £)



(15) Exemplary Screenshots of the High Channel Integration. Baseline Price with Promotion Presentation Formats (Now £):

The screenshot shows an e-commerce website interface. At the top, there is a search bar and navigation links for 'My Account', 'Wish List', 'Sign In', and 'Bag'. Below this is a menu with categories like 'New In', 'Clothing', 'Shoes', 'Accessories', 'SUITING', 'Activewear', 'Brands', and 'Sale'. A black banner across the top of the product area reads 'FREE CLICK & COLLECT' and 'NEXT DAY DELIVERY'. On the left side, there is a 'Home' section with a 'Shopping Policy' box containing the text: 'Next day free delivery.', 'Return product is free online or offline.', and 'Directly refund the money to your bank account.' The main product area displays three items in a grid: a blue 'Waterproof jaket' for 'Now £49.00', a red and white plaid 'Long sleeve shirt' for 'Now £24.00', and a pair of 'Walking shoes' for 'Now £36.00'. Each item has a small image above its name and price.

(16) Exemplary Screenshots of the Shirt Manipulated Price with Promotion Presentation Formats (Now £):

This screenshot shows a single product presentation for a 'Long sleeve shirt'. The shirt is a red and white plaid pattern. Below the image, the text reads 'Long sleeve shirt' followed by 'Now £29.00' in a large, bold font. The entire presentation is enclosed in a black rectangular border.

(B) Survey of Study 2

Before asking you to participate in this study, we have a question to determine if you are eligible to participate.

Where were you shop for casual clothes?

- Online only Physical stores only Both of them

NEXT

Dear Participant,

Thank you in advance for your participation in this study. The aim of this study is to understand how a consumer feels about the prices of fast fashion products in online and offline channels.

This study is part of my doctoral research. Your answers will be used only for academic purposes and will be treated with complete confidentiality. You are free to withdraw at any time without giving a reason.

If you agree to participate in the study, it will take about 10 minutes to complete the survey.

Do you agree to participate in the study?

- Yes No

NEXT

Please indicate your agreement with the following statement: (agree / disagree)

Online stores normally provide better prices than shopping in traditional stores.

Online stores provide better discount than shopping in traditional stores.

Online stores normally provide better bargain than high street stores.

Online stores provide discounts more frequent than traditional high-street stores.

Online prices often vary across different similar stores than traditional high-street stores.

Online stores are continece for me to find better price than traditional high-street stores.

How often do you shop for clothes? (Select which best describes you).

- Weekly
 2-3 times per month
 Monthly
 Every three months

How long do you spend in clothes shopping?

- Less than 30 mins
 Less than 1 hour
 Less than an hour and half
 Less than 2 hours
 More than 2 hours

Please carefully read the following scenario:

Imagine that you are searching online for clothes at one of the most popular multi-channel retailers in the UK. The retailer has an internet website and several physical stores. This gives you an option to purchase the products from any channels you prefer.

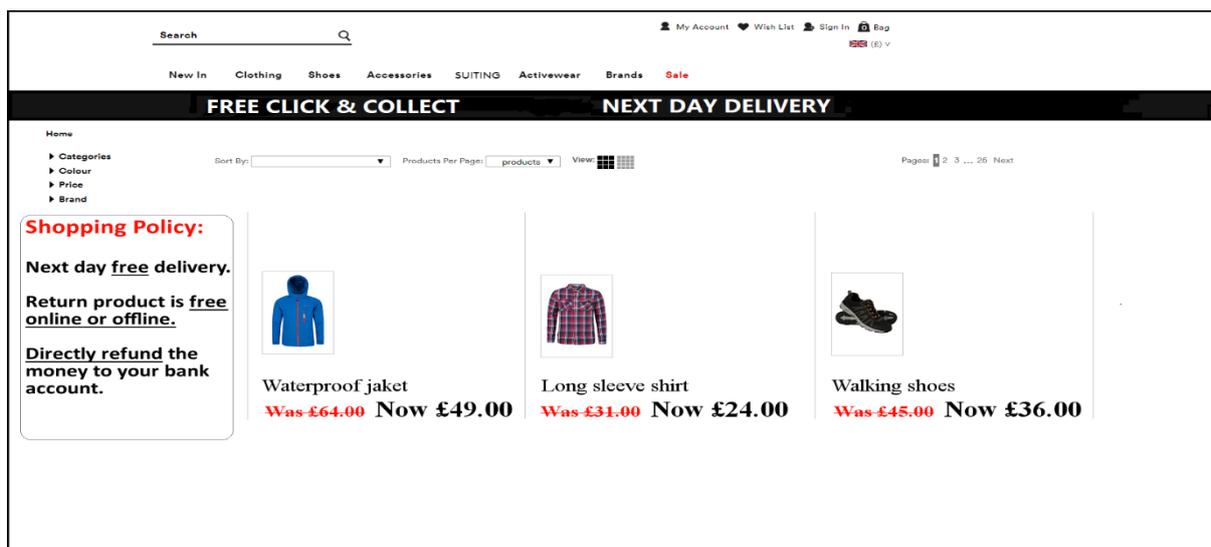
The online store navigation is convenient and you have the possibility to specifically select the available products according to categories, materials, and application purposes. The overall graphic presentation of the online store is high-class. You are browsing the online shop and use the available information and services in order to find suitable clothes.

The online store also informs you that the same conditions concerning service and the return of products apply across all distribution channels. It is also possible to return or exchange online purchases in any offline store without any further questions asked.

At this time, you just look at random items without intent to purchase. The next page you will find several items.

Please, click <NEXT> to continue.

NEXT



Based on the scenario, please answer the following: (agree/ disagree)

The price framing shows the amount of the discount.

The price framing shows the discount is attractive.

The price framing shows the discount is large.

The price framing shows the discount is tempting

Based on the scenario, please answer the following questions which is about channels integration: (agree/ disagree)

The online store makes easy to switch to the physical store.

The services and functions in online store and the physical store complement each other.

The online store and physical store have coordinated and aligned their services.

NEXT

In the “Black Friday” season, the retailer sent you a reminder email related of what you have looked previously. You are really like the “long sleeve shirt”, so you found the shirt as following.

Please, answer the following questions.



I perceive the promotion that I received happen once a year. (agree/ disagree)

What extent did you notice price differentiation between the current price "Was 34.00 Now £29.00" of above product and the price you saw in the previous page. (If you did not notice any change please select “0”).

DECREASE ▼ 30%- ▼ 20%- ▼ 10%- NO ▲ +10% ▲ +20% ▲ +30% INCREASE

NEXT

The following questions are about perceived price value of the current deal. (agree/ disagree)

The shirt price at a good level for the money to pay.

The shirt price is a good deal relative to other offers available in the market.

The shirt price is a great value.

At the price shown, the shirt is a very economical.

The shirt is considered to be a good buy.

The price shown for the product is a very acceptable.

This shirt appears to be a bargain.

The following questions are about perceived price fairness of the current deal. (agree/ disagree)

The price of the shirt is fair.

The price of the shirt is justifiable.

The price of the shirt is reasonable.

The following questions are about purchase intention of the current deal. (agree/ disagree)

The likelihood of purchasing the product at this retailer is high.

At these prices I would consider buying the product at this retailer.

The probability that I would consider buying the product at this retailer is high.

My willingness to buy the product at this retailer is high.

The following questions are about relationship quality with the retailer. (agree/ disagree)

Overall, I believe the retailer is honest.

I believe the retailer can be relied upon to keep its promises.

I would not find it necessary to be cautious in dealing with this retailer.

I believe the retailer is trustworthy.

Altogether, I am satisfied with retailer.

Overall, I am satisfied with my shopping experiences at retailer.

I'm totally convinced of this retailer.

This retailer totally meets my expectations.

The following questions are about credibility and difficulty of the scenario:

How credible was the scenario described the task on your opinion?

(Where; 7=credible/ 1= not very credible).

How difficult to understand was the described task in your opinion?

(Where; 7 = not difficult at all/ 1= very difficult).

NEXT

What is your gender?

- Male Female

What age group do you belong to?

- 18-25
 26-35
 36-50
 51-70
 71+

Please, indicate your current monthly income after tax:

- Less than £1000
 £1000 to £1500
 £1501 to £2000
 £2001 to £2500
 £2501 to £3500
 £3501 to £4000
 ≤ £4001