Price discount strategies in times of increasing price transparency: How price consciousness and price comparison moderate the effect of discount strategy on store price image

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Summary: This research uses a large set of price promotion field data to better understand the application of price discount strategies by Swiss grocery retailers. Taking the prevalence of these strategies in the Swiss grocery retail market as a basis, we use an online experiment that builds on recent developments in technology usage by consumers and investigate the impact of price comparison on store price image. The results show that Swiss grocery retailers have increased their number of discounts offered over the observation period of two years. In addition, store price image significantly improved with the number of discounted products offered. On the other hand, discount depth had no influence on store price image. These effects, however, are dependent on consumers' price consciousness and their (non-) usage of a price comparison tool. Lastly, theoretical and practical implications are being provided.

Keywords: Pricing, price discounts, retailing, price comparison, price consciousness, experiments, field data

Die Wirkung von Preisreduktionsstrategien auf das Preisimage von Handelsunternehmen: Eine Untersuchung zur moderierenden Rolle von Preisbewusstsein und Preisvergleichen

Zusammenfassung: *Trotz kontroverser Diskussionen um die Wirkung unterschiedlicher Preisreduktionsstrategien, fehlt es an empirischer Evidenz zur Anwendung und Verbreitung dieser Strategien in kompetitiven Handelslandschaften. Der vorliegende Beitrag untersucht anhand eines Felddatensatzes zunächst, welche Preisreduktionsstrategien Schweizer Lebensmitteldetailhändler anwenden. In einem darauffolgenden Online-Experiment analysieren wir die Auswirkungen dieser Preisreduktionsstrategien sowie die Nutzung von Preisvergleichsseiten auf das Preisimage von Händlern. Unsere Ergebnisse zeigen, dass die Schweizer Lebensmitteleinzelhändler über den Beobachtungszeitraum von zwei Jahren die Anzahl der angebotenen Rabatte erhöht haben, die Rabatthöhen sich jedoch deutlich unterscheiden. Im Online-Experiment weisen wir einen positiven Effekt der Erhöhung der Anzahl preisreduzierter Produkte auf das Preisimage eines Händlers nach. Gleichzeitig*

hat die Veränderung der Rabatthöhen keinen Einfluss auf das Preisimage. Die beschriebenen Effekte sind abhängig von der Preiswahrnehmung eines Verbrauchers und der (Nicht-)Nutzung von Preisvergleichsseiten. Abschliessend diskutieren wir theoretische und praktische Implikationen unserer Studie.

Stichworte: *Preisgestaltung, Preisreduktionen, Einzelhandel, Preisvergleich, Preiswahrnehmung, Experimente, Felddaten*

1. Introduction

Intensifying competition and price-sensitive customers have forced grocery retailers into a promotion-trap (*Fassnacht & El Husseini*, 2013) with plenty of negative economic consequences (*Heil & Helsen*, 2001). In addition to so called "high-low" retailers (Hi-Lo), even traditional every-day-low-price retailers (EDLPs),[1] such as the German-based discounter 'Lidl' have recently started offering large price cuts on a regular basis (*Lidl*, 2019). Companies intensify their promotion activity, although extant research has not been able to unequivocally confirm the hoped-for positive long-term effects of price discounts on important company metrics such as store price image, sales or profit (e.g., *Blattberg & Neslin*, 1989; *Cai, Bagchi, & Gauri*, 2016; *Mulhern & Leone*, 1990; *van Doorn & Hoekstra*, 2013; *Walters & MacKenzie*, 1988). More specifically, it remains unclear how to balance discount frequency and discount depth while increasing promotion activity in general.

Against this background, two price discount strategies dominate in retail contexts: offering shallow but frequent discounts vs. offering deep and infrequent discounts (e.g., *Levy, Weitz, & Grewal*, 2014). But so far, there is no evidence on the usage of one or the other strategy to offer the "lowest" price. In addition to company strategy, the trend towards the lowest price is accelerated by increasing price and information transparency (*Diehl, Kornish, & Lynch*, 2003) and the ubiquity of mobile internet devices (*Dekimpe & Geyskens*, 2019). From a behavioral angle, frequent and deep discounts shape the customers' reference prices and make them more price- and discount-sensitive in the long-run (*Dekimpe, Hanssens, & Silva-Risso*, 1998; *Kalwani & Yim*, 1992; *Kaul & Wittink*, 1995; *Mela, Gupta, & Lehmann*, 1997; *Pauwels, Hanssens, & Siddarth*, 2002). Today, a significant number of consumers visit price comparison websites or online retailers, such as Amazon.com, while standing in front of a shelf at a brick-and-mortar retailer (*Brynjolfsson, Hu, & Rahman*, 2013; *Cao*, 2019; *Falk, Kunz, Schepers, & Mrozek*, 2016). Thereby, the researched prices serve as reference prices when evaluating subsequent prices at local stores (*Bodur, Klein, & Arora*, 2015; *Falk et al.*, 2016; *Jung, Cho, & Lee*, 2014), which might change the effect of companies' price discount strategy on consumers' store price image.

1 "[…] two strategies often used in retailing [...] are the everyday low prices (EDLP), or always low prices, which may be a philosophy applied by discount stores, and the high and low prices (Hi–Lo), or promotional prices more typical of hypermarkets." (*Cataluña, Sánchez Franco, & Villarejo Ramos*, 2005, p. 331). Thus, Hi-Lo and EDLP are the two dominant retailing formats. EDLP refers to shops offering low prices at all times and Hi-Lo refers to retailers selling their products at a higher average price with frequent price discounts (*Fassnacht & El Husseini*, 2013; *Hoch et al.*, 1994). However, pure versions of EDLPs and Hi-Lo retailers are rare in practice. Therefore, "[EDLP and Hi-Lo] is best thought of a continuum" (*Bell & Lattin*, 1998, p. 67f.). In this article we look at retailers at both sides of the continuum, which we classify as "EDLPs" and "Hi-Lo retailers".

This article represents one of the first studies to address both the prevalence of discount strategies in a competitive and more transparent market than ever before and to investigate how the increased price comparison ability of consumers affects store price image perceptions. More precisely, two factors converge to create a unique research opportunity: First, we are able to gather and analyze real market data on price promotion strategies of the largest Swiss grocery retailers regarding their number of discounts and discount depth. Second, in light of increased price transparency, we mirror the prevalence of the dominant price discount strategies in an online experiment to investigate how price comparisons—even for unrelated products—and consumers' price consciousness influence the relationship between a retailer's discount strategy (deep vs. frequent discounts) and a consumers' store price image perceptions.

This article proceeds as follows. After analyzing the price discount strategies among the largest Swiss grocery retail companies over a period of two years, an experimental online study investigates effects of price comparison combined with price consciousness on store price image perceptions. The paper concludes by discussing the theoretical contributions and practical implications.

2. Study 1: Field Evidence on Discount Strategies

2.1 Conceptual Background

Although price discounts are a popular research subject for many decades, empirical evidence on the issue of balancing discount frequency vs. discount depth are inconclusive. *Hoch, Drèze and Purk*, (1994) found that increasing the frequency of shallow price deals led to an increase in unit volume and profit. Small but frequent discounts are more likely to foster a low price image compared to infrequent promotions with deep discounts (*Alba, Broniarczyk, Shimp, & Urbany*, 1994; *Alba, Mela, Shimp, & Urbany*, 1999). *Danziger, Hadar and Morwitz* (2014) find that under price uncertainty, consumers are more likely to choose a retailer offering shallow but frequent discounts, compared to a retailer offering high and infrequent discounts. In a natural experiment, *Mulhern and Leone* (1990) reported that a change from offering deep but infrequent discounts to shallow and frequent promotions led to a short-term increase in sales but did not affect store traffic. On the other hand, deep discounts are associated with increased traffic, which leads to increased sales of additional products (*Bliss*, 1988; *Gauri, Ratchford, Pancras, & Talukdar*, 2017; *Lal & Rao*, 1997; *Levy, Weitz, & Grewal*, 2014).

Because there is support for both strategies in different retail contexts—small and frequent vs. deep and infrequent promotions—there is no consensus on which one is superior. In a similar vein, there is no evidence on the prevalence of each strategy in competitive retail markets. By analyzing a large set of market data, we therefore seek to identify the retailers preferred price discount strategy before testing the influence of this specific strategy on consumers' store price image with an online experiment.

2.2 Method

We compiled price promotion data from four major Swiss brick-and-mortar grocery retailers (two Hi-Lo and two EDLP retailers) with a combined market share of over 80 % in Swiss grocery retailing (*Lebensmittel Zeitung*, 2018). For 107 calendar weeks (December 29, 2014 until December 30, 2016), we collected the prices and discounts of 23,495

grocery items (EDLP: 5,506, Hi-Lo: 17,989) using the information published in the four retailers' weekly promotional brochures. We exclusively included price discounts on food items, while excluding non-food items and non-price discounts such as "2 for 1" or "200 additional loyalty points" promotions. We then analyzed the development of the number of weekly discounted items as well as the average discount depth over time.

2.3 Results

2.3.1 Absolute number of discounts

A simple linear regression analysis was used to test whether calendar weeks (coded from 1 to 107, starting with the week of December 29, 2014) significantly predicted the weekly promotions of the four retailers. The results of the regression ($F(1, 106) = 95.49$, $R^2 = 47.62$ %) indicate that the calendar week ($\beta = 1.13$, $p < 0.01$) significantly influences the number of discounts. We can therefore conclude that the absolute number of discounts significantly increased across the observed time span. In addition, when ana-

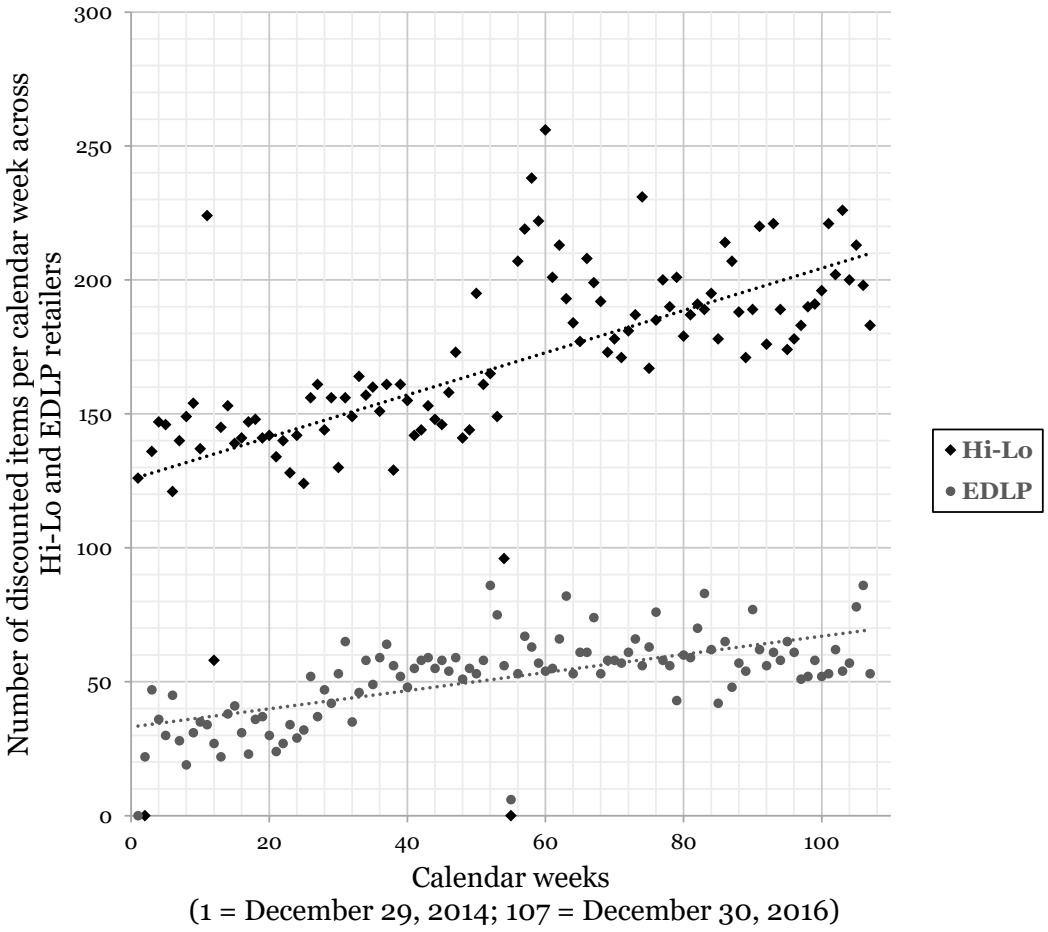

Figure 1: Number of promotions per week as a function of time across two retail formats Hi-Lo and EDLP (each represented by two retailers).

lyzed separately, we can observe the same trend across both retail formats (see regression plot in Figure 1): For the two EDLP grocery retailers ($F(1, 106) = 78.91$, $R^2 = 42.91$ %) the calendar weeks significantly predicted the number of discounts per calendar week ($\beta = 0.34$, $p<0.01$). The same holds for the two Hi-Lo retailers ($F(1, 106) = 64.44$, $R^2 = 38.03$ %, $\beta = 0.79$, $p < 0.01$).

2.3.2 Discount depth

In a second step, we compared the discount depths across the retail formats and years to analyze the retailers' strategic promotion decisions in times of increasing price transparency. Therefore, we looked at the average promotion depth in 2015 and compared it to the average percentage discounts given in 2016. We conducted a Welch's t-test in order to control for unequal sample sizes and violated assumptions of equal variances. The comparison of average discounts among the Hi-Lo retailers revealed a significant increase ($F(1, 17{,}988 = 37.74$, $p < 0.01$) of the average discounts offered in 2016 ($M = 27.36$ %, $SE = 0.10$ %) compared to the previous year's average ($M = 26.42$ %, $SE = 0.11$ %). On the other hand, EDLP retailers offered significantly lower ($F(1, 5{,}506) = 34.45$, $p < 0.01$) percentage discounts in 2016 ($M = 32.86$ %, $SE = 0.16$ %) than in the previous year ($M = 34.30$ %, $SE = 0.19$ %).

Over the observed time span of approximately two years, we were able to observe two major developments. First, all four retailers, independent of their overall pricing strategy (EDLP or Hi-Lo), are increasing their number of discounted products. We see this as a result of increasing price competition. Second, and maybe more interestingly, the retailers follow different discount strategies regarding discount depth. Whereas EDLP retailers tend to lower the percentage discounts they offer, Hi-Lo retailers offer their customers even higher discounts (see Figure 2).

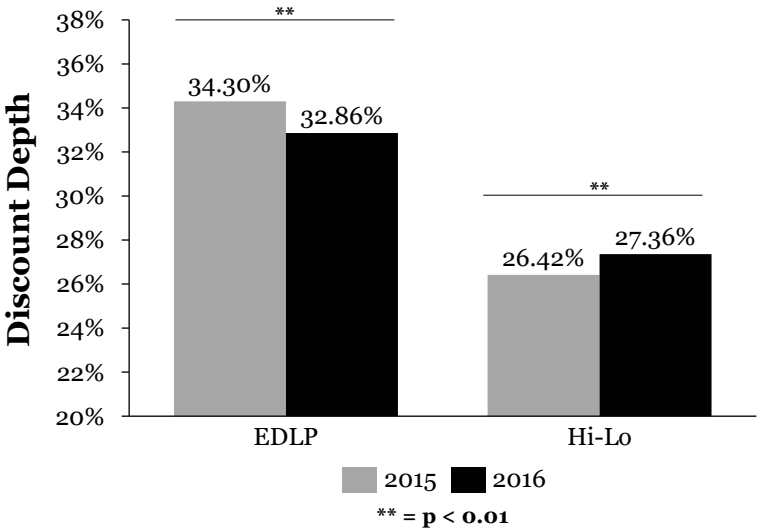

Figure 2: Mean discount depth development of EDLP and Hi-Lo retailers between 2015 and 2016

2.4 Discussion

In Study 1 we can observe that retailers, independent of their main pricing strategy, significantly increased the number of price promotions per calendar week over the period of two years. However, regarding the depth of the discounts, the promotion strategies differ between EDLP and Hi-Lo retailers. The results show that, in the future, the differentiation between EDLP and Hi-Lo retailers (e.g, *Bell & Lattin*, 1998; *Fassnacht & El Husseini*, 2013) may be diluted, as EDLPs started offering an increasing number of discounts at high discount depths. Thus, we may see an alignment of pricing and promotion strategies. In the following chapter we seek to analyze which of the observed strategies may be more beneficial for retailers by including the consumers' perspective. In doing so, Study 2 analyzes how both discount depth and number of discounted products influence consumers' perception of a store's price image.

3. Study 2: Online Experiment on the Consumer Perception of Discount Strategies

3.1 Conceptual Background

Today, consumers often combine online and offline channels in their customer journey and engage in strategies known as "webrooming", "web-to-store" or "research-shopping" (*Flavián, Gurrea, & Orús*, 2020; *Kleinlercher, Emrich, Dennis, Verhoef, & Rudolph*, 2018; *Pauwels, Leeflang, Teerling, & Huizingh*, 2011; *Verhoef, Kannan, & Inman*, 2015). A popular part of this strategy is to evaluate prices on price comparison sites (PCS) (*Bodur et al.*, 2015; *Jung et al.*, 2014). PCS are known to influence consumers even in the offline context by shaping their reference price and, thus, altering the perceived attractiveness of offline offers (*Bodur et al.*, 2015). Without consulting their technical devices for price information, consumers often do not know the explicit price of a product (*Dickson & Sawyer*, 1990; *Jensen & Grunert*, 2014; *Scheidegger, Rudolph, & Linzmajer*, 2018; V*anhuele & Drèze*, 2002). Therefore, they tend to judge prices intuitively against an internal reference price or they look for simple cues, such as price discounts, while evaluating the attractiveness of the offer (e.g., *Inman, Peter, & Raghubir*, 1997; *Jensen & Grunert*, 2014; *Monroe, Powell, & Choudhury*, 1986). Overall, the prices and perceived attractiveness of the offers shape a consumers' store price image (*Alba et al.*, 1999; *Graciola, De Toni, de Lima, & Milan*, 2018; *Lourenço, Gijsbrechts, & Paap*, 2015; *Ofir, Raghubir, Brosh, Monroe, & Heiman*, 2008) and, thus, influence their store choice and repurchase intention (e.g., *Graciola et al.*, 2018). Because consumers often lack explicit price knowledge (e.g., *Jensen & Grunert*, 2014; *Urbany & Dickson*, 1991; *Vanhuele & Drèze*, 2002) and will get more "low price cues", if more items are on promotion, we hypothesize:

H1: *In discount strategies, the number of items on discount will have a higher positive effect on store price image than discount depth.*

We expect that previous price research and a consumers' individual price consciousness will influence how the price strategy is perceived and evaluated (store price image). Price consciousness is known to be an influential moderator of price information processing (e.g., *Alford & Biswas*, 2002; *Bozkurt & Gligor*, 2019; *Kukar-Kinney, Walters, & MacKenzie*, 2007; *Noh, Lee, Kim, & Garrison*, 2013; *O'Neill & Lambert*, 2001; *Scheidegger et al.*, 2018). An individuals' reaction to price information strongly depends on the subjective importance of prices. Hence, we expect that consumers with a strong

fixation on prices react more positively to deeper and/or more frequent discounts than consumers with low levels of price consciousness.

However, we hypothesize, that only when consumers "overvalue" discount cues during their store price image formation (e.g., due to the lack of explicit price knowledge or an emotional/intuitive response to the price discount), the number and depth of discounts will be of significant influence. At this point, PCS may play a crucial role: as the price comparison task may activate a consumer's cognitive system, consumers might reconsider the attractiveness of a discount based on that activation. *Alter, Oppenheimer, Epley and Eyre* (2007) have shown that, based on experiential cues, people activate their cognitive system because they feel that a simplified System 1 (emotional, quick and intuitive) judgement could lead to a wrong conclusion (see *Kahneman* (2002) for more information on System 1 and 2). Even if conducted for an unrelated product group, we see a price comparison task as such an experiential cue. We summarize this expected relationship in Hypothesis 2:

H2: *The relationship between the retailers' discount strategy (number of discounted products and discount depth) and store price image is dependent on high price consciousness and lack of previous online price research.*

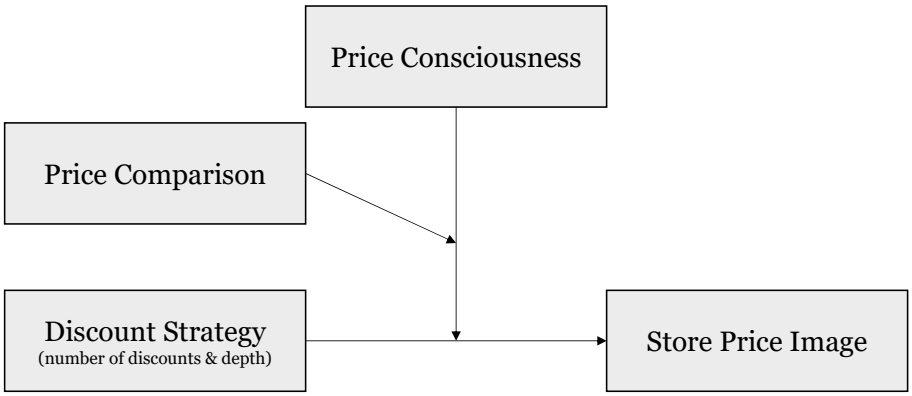

Figure 3: Conceptual diagram of the hypothesized moderated moderation model

3.2 Method

To complement the findings of Study 1 with actionable insights, we try to observe the effect of different promotion strategies on store price image in this online experiment. In addition, we analyze the role of PCS and price consciousness. We do this by manipulating the two main determinants of price promotion strategies: *(1) discount depth in %* and *(2) number of discounts offered* at a retailer. 498 U.S.-citizens were recruited on Amazon Mechanical Turk for this study. We excluded participants failing[2] to do the price comparison task (N = 21), leaving a final sample of 477 participants (median age = 33 years; 52.6 % male). To study the hypothesized relationships between price comparison behavior, price consciousness, store price image and discount strategies, the participants were randomly

2 All participants who entered extreme values after the price comparison task. All values 1.5 Inter Quartile Range (IQR) above the 75 %-quartile and 1.5 IQR below the 25 %-quartile were considered as extreme values.

assigned to one of eight experimental groups in a 2 (price comparison manipulation vs. no manipulation) x 2 (20 % discount vs. 40 % discount) x 2 (2 discounted items vs. 4 discounted items) between-subjects design.

First, half of the participants received the task to search for the lowest price of two items, "Gopro Hero 7" and "Apple TV 4K" on Google's price comparison website "Google Shopping". The participants were then asked to state the lowest market prices of the two items in USD. The second part of the study consisted of a grocery-shopping scenario at a fictitious brick-and-mortar retailer "Pine Market". All the participants saw ten everyday items (such as cereals, bread, milk, detergent, eggs etc.) and were asked to put them into their fictitious shopping basket by selecting the items with a click. Pictures and descriptions of the products were deliberately kept neutral to avoid explicit a priori price expectations (see Figure 4).

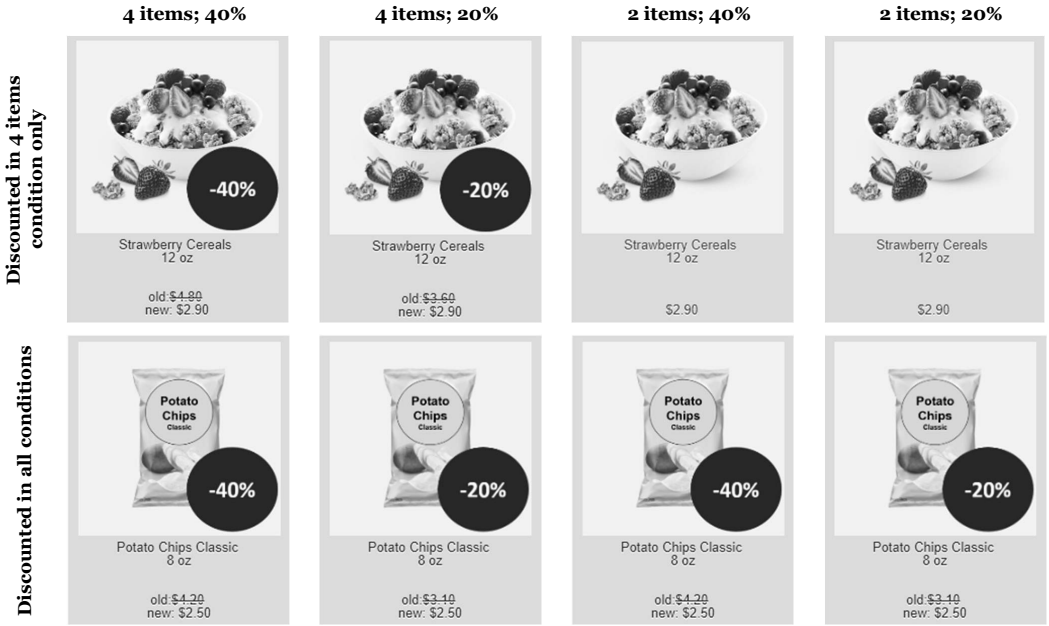

Figure 4: Two products across the 4 different price discount scenarios (4 items and 40 %; 4 items and 20 %; 2 items and 40 %; 2 items and 20 %)

In order to ensure plausible purchase prices in our shopping scenario, we priced the items according to best-sellers of the same category on Walmart.com and Amazon Fresh. The items and purchase prices were the same across all conditions and the displayed order of the ten items was randomized during the experiment. However, the number of discounted items (2 vs. 4) as well as the discount depth (20 % vs. 40 %) varied across the four conditions. To increase the external validity of our experiment and to ensure the comparability between Study 1 and Study 2, we used the discounts levels based on the observations in Study 1, where most observations fell between approx. 20 and 40 %. For the sake of comparability between the two factors (depth and number of discounts) we adjusted the number of discounts (2 vs. 4) in the same ratio as the discount depth

(20 % vs. 40 %). When an item was on price promotion, only the "before" price was adapted, while the purchase price (price after subtracting the discount) and therefore the overall basket size was kept constant across all conditions. In doing so, we avoided that the overall basket size would have an effect on store price image rather than the discount strategy (e.g., *Desai & Talukdar*, 2003).

In fact, the participants would all see and pay the same prices across all scenarios. The discounts would therefore not save them money. Figure 4 illustrates how two different items varied across the four price promotion conditions. "Strawberry cereals" and "soda cans" were only promoted in 4-discount scenarios and "potato chips" and "liquid laundry detergent" were promoted in all scenarios. We chose those four items as our promotion items as they are frequently discounted at real retail stores. All other items had the same price communication in all scenarios.

After the product presentation, we measured the participants' perceived store price image of "Pine market" as well as their price consciousness levels. Store price image was measured using a 3-item, 7-point semantic differential (unattractive prices – attractive prices; unreasonable prices for value – reasonable prices for value; prices much lower than other stores – prices much higher than other stores (reverse coded)) developed by *Biswas, Pullig, Yagci, and Dean* (2002) who adapted the retail store image scale by *Dickson and Albaum* (1977). Price consciousness (*Lichtenstein, Ridgway, & Netemeyer*, 1993) values were collected with a 5-item, 7-point Likert scale anchored by totally disagree (1) and totally agree (7): (I am not willing to go to extra effort to find lower prices. (reverse coded); I will grocery shop at more than one store to take advantage of low prices.; The money saved by finding low prices is usually not worth the time and effort. (reverse coded); I would never shop at more than one store to find low prices. (reverse coded); The time it takes to find low prices is usually not worth the effort. (reverse coded)).

3.3 Results

3.3.1 Effect of Discount Strategy on Store Price Image

As we hypothesize in H1 that the number of discounted products would have a stronger positive effect on store price image (Cronbach`s $\alpha = 0.83$)[3] than the discount depth, we conducted a univariate analysis of variances for discount depth and number of discounts on store price image. While the overall model was significant ($F(3, 474) = 3.01$, $R^2 = 0.02$, $p < 0.05$), only the number of discounts had a significant effect on store price image ($F(1, 476) = 7.34$, $p < 0.01$). On the other hand, discount depth ($F(1, 476) = 0.02$, $p > 0.1$) and the interaction term ($F(1, 476) = 1.56$, $p > 0.1$) had no significant effect on store price image. When comparing the mean store price image values across the four price promotion conditions, only discounts with a high depth showed a significant increase in store price image values with increasing numbers of discounted items (see Figure 5): At a deep discount level (40 %), store price image values were significantly lower ($t(240) = -2.78$, $p < 0.01$) in the two-discounts condition ($M = 4.54$, $SE = 0.12$) vs. the four-discounts ($M = 5.02$, $SE = 0.12$) condition.

3 In favor of a high reliability, the reverse coded item had to be removed from the store price image scale.

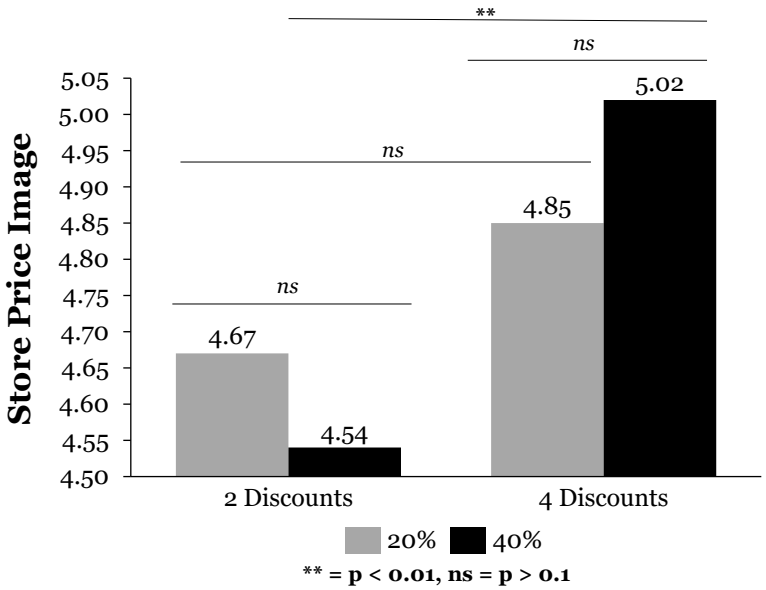

Figure 5: Store price image values in dependence of discount depth (20 % vs. 40 %) and number of discounts (2 vs. 4 items)

3.3.2 Moderating Role of Price Comparison and Price Consciousness

To validate our hypothesized moderated moderation model of discount strategy (number of discounted products and discount depth) on store price image in H2, we conducted an analysis using the PROCESS macro for SPSS (*Hayes*, 2017). Even though discount depth had no significant effect on store price image in the previous analysis, we still tested the moderated moderation model for different discount depths. However, the model (R^2 = 0.02, F(1, 476)=1.56, p > 0.1) and the three-way interaction (p > 0.1) were not significant. We then tested for a significant three-way interaction between number of discounts, price consciousness (Cronbach`s α = 0.84) and price search manipulation and regressed them on store price image. The results are summarized in Table 1 and indicate a significant three-way interaction as well as a significant overall moderated moderation model.

In a second step, we analyzed the interaction between number of discounts and the main moderator price consciousness at both values of price search manipulation (dummy-coded: 1 = manipulated and 0 = not manipulated). We can observe a significant moderating effect of number of discounts on store price image, when participants have not conducted a price search task (PCSM = 0, effect = 0.13, t = 2.42, p < 0.05). The same effect was not significant in the price manipulation group (PCSM = 1, effect = -0.05, t = -0.67, p > 0.1). We then tried to identify the areas of significant moderated moderation by analyzing the conditional effects of number of discounts on store price image at price consciousness values at ±1 standard deviation from the mean. In Figure 6 we see a significant moderated moderation at mean (price consciousness = 4.48, effect = 0.23, t = 3.03, p < 0.01) and high (price consciousness = 6.05, effect = 0.42, t = 3.72, p < 0.01) values of price consciousness. We could not observe a moderated moderation at low values of price consciousness (price consciousness = 3.31, effect = 0.05, t = 0.51, p > 0.1).

	Coefficient	SE	t	p
Intercept	6.65	0.85	7.85	**
Price Consciousness (PRCN)	-0.56	0.18	-3.14	**
Number of Discounts (NDIS)	-0.39	0.27	-1.47	*ns*
NDIS*PRCN	0.13	0.06	2.42	*
PCS Manipulation (PCSM)	-2.27	1.50	-1.52	*ns*
NDIS*PCSM	0.70	0.45	1.56	*ns*
PRCN*PCSM	0.58	0.30	1.93	†
NDIS*PRCN*PCSM	-0.18	0.09	-2.00	*

R2 = 0.05, F(1, 476) = 3.70, p < 0.01

*** = p < 0.01; * = p < 0.05; † = p < 0.1; ns = p > 0.1*

Table 1: Moderated Moderation Summary

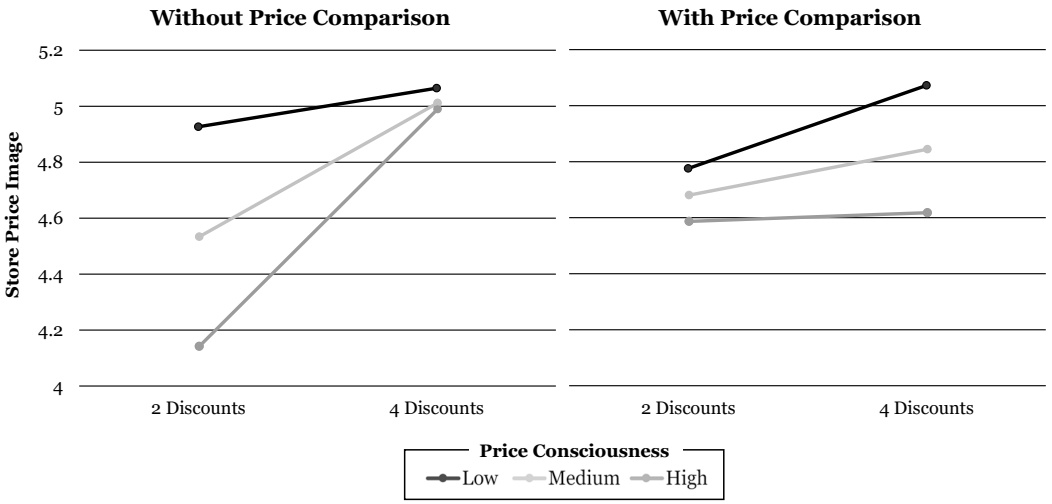

Figure 6: Moderated moderation between number of discounts and store price image at different values of price consciousness and price comparison

3.4 Discussion

In Study 2, we find a significant main effect of number of discounts on store price image. At the same time, discount depth did not influence consumers' store price image. We therefore conclude that increasing the number of discounted products may be more beneficial for improving one's store price image than increasing the discount depth. This supports our Hypothesis 1, where we expected that the number of items on discount will have a higher positive effect on store price image than discount depth. However, against our hypothesized effects, discount depth did not have an observable effect on store price image at all. One possible explanation could be that customers classify both 20 % and 40 % as low to moderate discount levels, as they may already have become accustomed

to even higher discount depths. We see an alternative possible explanation in consumers' rather low price knowledge. Due to the lack of explicit price knowledge (e.g., Linzmajer, 2013; Scheidegger et al., 2018) consumers may not be able to distinguish between 20 % and 40 % discount depth when they think about how much money they save though the discount.

By bringing the two moderators "price consciousness" and "price comparisons" into our model, we were able to gain even more insights into the relationship between number of discounted products and store price image formation. Conducting an unrelated price comparison task prior to the shopping task erased the positive main effect of number of discounts on store price image. We hypothesize that the price comparison task activates the consumers' cognitive system which will make them less susceptible to discount frames. When the price comparison task was absent, number of discounted products still had a significant effect on store price image. However, this effect was dependent on participants' individual levels of price consciousness. Participants with high levels of price consciousness reacted more strongly to an increased number of discounted products (as illustrated by the steep dark grey slope on the left in Figure 6). We will further discuss the implications of these and the previous results in the following chapter.

4. General Discussion

Increased price transparency through price comparison websites as well as the ease of gathering price related information has boosted interest in analyzing price discount strategies and consumers' perception of store price image. While preceding research focuses on specific effects of discount strategies on consumer perception and company performance (e.g., *Levy, Weitz, & Grewal*, 2014), less is known about prevalence and the development of price discount strategies in a competitive retail market. Furthermore, although existing research acknowledges the influence of analyzing smartphone usage in general (*Scheidegger et al.*, 2018), less attention has been given to how the opportunity to compare prices in order to adjust consumers' reference prices affects store price image.

The current research applies the collection of field data to better understand the usage of price discounts in Swiss grocery retailing over time. In combination with an online experiment, we build on recent developments in technology usage by consumers and document the impact of price comparison on store price image. In addition, we also shed light on an important consumer characteristic regarding price perception and decision-making, namely price consciousness.

Our findings make several contributions to the existing literature. First, they inform the ongoing debate about which price discount strategies are used by retailers in a more transparent consumer market. Building from the idea of this increased market price transparency, we measure number of discounts as well as discount depth as central characteristics of price discount strategies. Using the collected promotion data helps us to uncover the development of price discounting activities by Swiss grocery retailers.

Second, our results illustrate that number of discounts and discount depth have different effects on consumers' store price image. Consistent with our theorizing, the number of items on discount have a stronger positive effect on store price image than discount depth. To account for the complex store price image formation with its manifold antecedents, we detail our conceptual model and add the underlying price consciousness of consumers as additional construct. As consumers move through the web, leaving a complex price

comparison pattern, the interaction with their price consciousness is a starting point to simplify and structure the antecedents of store price image formation. Relying on extant research into consumer pricing decisions, we transfer the idea of experiential cues into the context of store price image. The store price image of high- and medium price conscious consumers without price comparison activity is strongly influenced by number of discounts. Furthermore, we find no such relationship for low price conscious consumers with price comparison activity. One possible explanation is that price comparison activates the cognitive system of consumers, leading to an adapted judgment of the discount strategy (*Alter, Oppenheimer, Epley & Eyre*, 2007; *Kahneman*, 2002).

4.1 Theoretical Implications

This research links retail strategy and psychological approaches to study consumers' store price image. Prior research has used aggregated input measures (such as discount strategy per se), and has also focused on multiple consumer traits (e.g., *Ofir et al.,* 2008). However, none of these studies examines the relationship between discount depth, number of discounts and store price image in a transparent and competitive market. Macro-level collective outcomes (such as store price image) also depend on micro-level individual decisions about what to use (e.g., price comparison websites). Consequently, when trying to understand collective outcomes, it is important to consider the underlying individual-level psychological processes that drive store price image. Along these lines, our research suggests that price comparison usage as a proxy for a cognitive activation helps consumers succeed on the path to store price image formation, dependent on their level of price consciousness.

It is also worthwhile to consider these findings in relation to the prevalence and development of price discount strategies. Just as retailers seem to align their price discount strategies moving away from the former EDLP model, their increased use of Hi-Lo principles renders it difficult to distinguish between those two formats. While there was likely some overlap in these determining factors in the past, a clear-cut retailer price discount strategy will constantly dilute in the years to come.

4.2 Practical Implications

These findings also have important practical implications. Faced with the fear of giving away too much or too little discount, retailers align their price discount strategies in competitive and transparent markets. This might lead to a dilution of their former value proposition, making it harder for the company as well as the consumer to identify necessary differentiation characteristics. As price acts as the most important cue for purchase decisions, giving away clear-cut store price images might backfire with regard to company sales and profits. At the same time, our results suggest that increasing the discount depth from 20 % to 40 % did not influence the store price image. Only increasing the number of items on promotion did. We expect that the promotion itself may be a stronger "low price" signal on grocery shoppers than the exact discount depth. This may be due to their lack of explicit price knowledge. Thus, in comparison to discount depth, the increasing number of discounts led to a more favorable store price image. Based on these findings, retailers could save some of their margin by not deepening or even lowering their discount

levels. On the other hand, they should focus on providing the consumer with more "low price" signals (e.g., through increasing the number of items on promotion).

Our findings also shed light on the question of drivers of store price image in a digitalized world. As price comparison opportunities will continue to rise, we expect the positive effect of number of discounts on store price image to slowly disappear. When central characteristics of discount strategies do not affect store price image any more, retailers have to re-think current pricing practices: As discounts only reduce the so-called pain of paying, new pricing strategies might focus on emphasizing the reward value of an offer (e.g., *Linzmajer*, 2013). Interestingly, number of discounts influence highly price conscious consumers to a stronger degree than their price unconscious counterparts. For retailers, this could indicate opportunities to address a group of price specialists with their discount strategy. On the other hand, it becomes increasingly important for consumers to understand the complex mechanisms that lead to their price perceptions in light of an overly complex world with more price cues than ever before. In this respect we show, that if consumers use price comparison opportunities in a digital world, the effects of their general trait of price consciousness on store price image are weakened. We thereby offer an interesting behavioral strategy to manage one's own price consciousness.

4.3 Future Research and Limitations

The data in Study 1 consisted of price discounts on grocery items only. Therefore, we do not know if the observed relationships can be transferred to different product groups (e.g., consumer electronics or fashion). This may be observed through future research.

In general, laboratory experiments lack external validity (e.g., Levitt & List, 2007; Levitt & List, 2008). All participants in Study 2 were not confronted with a real purchase scenario. Therefore, future researchers may try to replicate Study 2 in the field with a collaborating industry partner. Further, we did not adapt the product prices across the different scenarios, in order to control for alternative factors (e.g., basket size). Therefore, we rather observed the effect of discount framing on store price image than the effect of actually saving money.

Through an extension of Study 2, future researchers may be able to differentiate between more levels in "number of discounted products" as well as "discount depth" in order to determine the optimal values. The relationship between a favorable store price image and number of discounted products as well as discount depth may not be linear. In addition, researchers may include (real) brands in their laboratory studies, in order to increase the applicability of these results to an extended range of grocery items.

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