The impact of sales promotions on Facebook performance, for high and low equity brands

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ABSTRACT

Title of the dissertation: "The impact of sales promotions on Facebook performance, for high and low equity brands."

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Sales promotions are becoming increasingly important with the growth of competition. Brands are gradually adopting these strategies on social media networks to reach people quickly and without costs. For that reason, it is indispensable to understand the impact of those strategies in the consumer perspective, and also the factors that lead brands to succeed in the digital field.

This dissertation presents the impact of over-promotion on Facebook – regarding the frequency posting time and the reduction amount – and the content type that contributes for a better performance of high and low equity brands by using descriptive quantitative research and analyzing secondary data of Facebook posts.

The results show that promotional posts do not perform better than non-promotional and that over-promoting (concerning post frequency and reduction amount) affects the performance of both high and low equity brands on social media. Indeed, sales promotion only beneficiate low equity brands when they do not over-promote.

To conclude, the findings of this research complement the academic literature by reinforcing the importance of having a suitable social media marketing strategy (SMMS) focused on the customers' expectations by optimizing their Facebook posts, and achieving better performance levels.

Keywords: Sales Promotions, Brand equity, Social Media Networks, Performance, Customers.

SUMÁRIO

Com o aumento da competição e com o objetivo de alcançar os consumidores de forma mais rápida e menos dispendiosa, as marcas estão cada vez mais a incluir promoções nas suas estratégias de marketing, nas redes sociais. Por esta razão, é indispensável compreender os fatores de sucesso do mundo digital e as consequências das promoções na imagem das marcas. Esta dissertação apresenta o impacto das promoções excessivas feitas no Facebook – com o foco na frequência das publicações e no montante das reduções – e o tipo de conteúdo que mais contribui para uma melhor performance das marcas de baixo e alto capital, através de uma pesquisa quantitativa descritiva e análise de dados secundários.

Os resultados evidenciaram que não existe um diferencial entre a performance das publicações promocionais com as não promocionais, e que a promoção excessiva (relativamente à frequência das publicações como ao montante reduzido) afeta a performance tanto das marcas de alto como de baixo capital. De facto, quando não são excessivas, as promoções beneficiam apenas as marcas de baixo capital.

Por fim, os resultados desta dissertação complementam a literatura académica, reforçando a necessidade de as marcas criarem estratégias de marketing focadas nas expetativas dos consumidores. As marcas podem ainda usar os conhecimentos deste estudo para otimizar as suas publicações no Facebook, de forma a obterem melhores níveis de performance.

Palavras-chave: Promoções, Capital das marcas, *Social Media Networks*, Performance, Consumidores.

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GLOSSARY

SMN – Social Media Networks are platforms where connections are shared both for people or business entities. The websites allow people to create a profile, connect with others, and also enable companies to manage and promote their business in the online field.

UGC – User-Generated Content is any digital content not created by the owner of the websites but created and shared by their users, such as videos, photos, mentions, likes, reactions, status updates, infographics, online ads, and blogs.

SMMS – Social Media Marketing Strategies are plans created by managers required to achieve the success point. In those plans, they define the goals, the target, the content calendar, and the actions to be.

WTP – Willingness to Pay is the maximum amount that a consumer is prompt to pay for one unit of a product or a service.

OPS – Online Pricing Strategies are policies adopted by brands in their social websites where they define the value of their products or services taking into account the production costs. Those strategies include sales promotions and aims to increase sales and attract customers.

CLT – Central Limit Theorem defends that given random and independent samples of N observations, the distribution of its means becomes normal as the number of samples increases, regardless of the shape of the population distribution.

CHAPTER 1 – INTRODUCTION

1.1. Background and problem statement

Consumers are increasingly exposed to the content created by brands that influence their purchase behavior. In theory, past research presented relevant insights about the effect of offline sales promotions in the consumption (Ailawadi and Neslin, 1998), and their consequences concerning brand image and status.

Brands have been allocating a higher percentage of their budget for advertising on social media networks (SMN), due to the increasing number of e-commerce sales predicted until 2021 (Statista, 2018). The effect of increasing social media initiatives regarding sales promotions affects the performance of brands (Rapp, Beitelspacher, Grewal and Hughes, 2013). Some brands beneficiate of adopting those strategies by accelerating the brand/product choice process, whereas others are negatively affected (Alvarez and Casielles, 2005). Since brands are unable to adopt the same online and offline strategies, even if they perform well in the offline field, sometimes their online strategy regarding sales promotions denigrate their image.

Statistics showed more than one half of the UK population waits for promotions to buy a product (Statista, 2015). Specifically, many of these individuals do not buy some of the products for the full price. Although people seem to enjoy getting products on promotion, seventy-one percent of the population considers that retailers exaggerate the level of discount offered (Statista, 2015), pointing out that often, brand managers struggle to create social media marketing strategies (SMMS). This contradiction creates the need to understand the reactions that consumers have towards sales promotions, and their consequences in the brands' image, particularly in the online competing community.

Consumers use price cue as a signal to indicate product quality and prestige (Lichtenstein, Ridgway, and Netemeyer, 1993), and they also tend to neglect the base value of products due to the lack of information about percentages discounts (Chen et al., 2011). Exploring these issues that represent a potential threat for the performance is relevant to the academic knowledge since they can be the reason for brands to underperform online.

Concerning the existing threats, the heterogeneity among consumers leads them to look for brands capable of satisfying their self-definition and identification needs (Bhattacharya & Sen, 2003). Undoubtedly, consumers' identification with brands depends on their equity, i.e., people's perceptions about the value, characteristics, corporate image, reputation, beliefs, and reactions of brands (Bhattacharya & Sen, 2003). These factors, added to the consumer-company relationship, define the level of similarity and attractiveness (key drivers of identification) that motivate consumer behaviors and sales (Vogel, Evanschitzky, and Ramaseshan, 2008).

Several studies explored consumer behavior regarding promotions, yet, little or no attention has been paid to explicitly study the impact of those strategies on social media performance. To best of my knowledge, there is a gap in the literature about consumers' reactions to brands (high vs. low) offering both high and low promotions in SMN, especially on Facebook. The absence of advice on online promotions may lead brands to lose users since they miss the identification feeling with the brand. For these reasons, this research project aims also to share insights about the consequences of over-promoting on Facebook performance, adding translational value to the online brand communities.

Facebook has been the subject of study since this network become trendy among the worldwide population (Statista, 2018), and also because the number of its active users that is predicted to increase until 2021 (Statista, 2018). Given that, I believe that it is still worthwhile to explore this tool as a proxy or brand-costumer relationship. Specifically, Facebook metrics are particularly important to explore consumer reactions to sales promotions and their consequences on the performance of the brands.

1.2. Aims and scope

This dissertation aims to study the impact of the following variables: brand equity, promotional frequency, promotional discount, and promotional type on the Facebook performance of brands.

Previous analyses evidenced some factors that lead consumers to engage with promotional strategies, but still, their online impact has not been yet studied, or whether the threats to their performances in the online field. Therefore, this research aims to provide useful insights to managers to optimize their online strategies in SMN, especially on Facebook.

It is relevant to refer that this study does not analyze the effect of price changes on purchase intention because the number of likes cannot directly measure it, or either being the favorite brand does not guarantee that (Parsons, 2013).

Additionally, this study will not be about the consequences of general advertising strategies on Facebook, but specifically about the impact that price change has on brands' performance. Price strongly relates with equity, being responsible for the consumer evaluation of a brand – high price is associated high equity, and frequent price promotions are related to low equity brands (Yoo, Donthu, and Lee, 2000). Therefore, this study focused on the existent literature and on the analysis of the particular user-generated content (UGC) produced on Facebook.

With the purpose of achieving these insights, the dissertation targeted the following research questions:

1. Is there an impact of over-promoting products on the performance of brands on Facebook, as a function of brand equity?
2. Do sale promotions lead to better performance levels on Facebook, as a function of brand equity?

1.3. Research methods

To answering the aforementioned research questions, descriptive research approach was undertaken through a statistical analysis of secondary data from Facebook, exploring the underlying success factors of sales promotions for high and low equity brands.

Quantitative secondary data about Facebook brands, namely McDonald's, IKEA, Lidl, Continente, Pingo Doce and FNAC were collected. Accordingly, ten promotional and ten non-promotional posts of each brand, corresponding to one hundred and twenty Facebook posts, were collected between 13th – 20th of October 2018, with the purpose of analyzing the influence of sales promotions factors as a function of brands' equity (high vs. low). Besides, the data analyzed derived from the Facebook posts enabled to get insights about the customers' preferences regarding sales promotions.

Data collected to measure the consumers' posts engagement were the UGC of posts as likes/reactions, comments, shares, and the number of page followers. Following, this index was used to measure and compare the brands' performance on Facebook.

For statistically testing the hypotheses, data were analyzed through SPSS by performing ANOVAs and ANCOVAs tests. The dependent variable is the performance of brands on Facebook, while the brand equity, the promotional type, the promotional frequency, and the promotional discount compose the independent variables.

The variety of sales promotions included in the study focus on financial discounts (included coupons and quantity discounts like BOGO – buy one, get one free) and percentage discounts. The study did not consider other types of sales promotions.

After achieving some results about the consumers' evaluations of online sales promotions and the degree of the association between them and the brands' equity, managerial implications, limitations, and suggestions for further investigation were presented.

1.4. Relevance

This research program taps onto online pricing strategies (OPS) for both high and low equity brands. Conclusions will be crucial to developing a more accurate and effective strategy aligned with consumer perceptions and expectations.

Improving this department will undoubtedly enhance the performance of brands on SMN. Besides, it generates translational meaning since brands can directly benefit from the insights of both positive and negative roles of online sales promotions.

Nevertheless, this dissertation will help managers to understand which type of content is preferred by consumers on Facebook and understand the best path to empower their OPS, generating more traffic to brands' websites.

1.5. Dissertation outline

Chapter II presents a literature overview of brand equity and its importance for the success of brands. Following, I will approach the consumer perspective of price promotions and its general effects on the performance of brands. Moreover, a deeper understanding of sales promotions in social media and the UGC produced by them on Facebook posts define a measure for the performance. Based on this conceptual framework, I will end the Chapter II by presenting predictions and hypotheses.

Chapter III introduces the research methodology used to answer the research questions and Chapter IV describes the findings. The last one displays a section where the results are discussed and related to the research hypotheses.

Lastly, Chapter V summarizes the main findings and conclusions, highlighting some relevant managerial implications and some advice for improvement. This Chapter will be finished with a reflection on the limitations and suggestions for further research.

CHAPTER 2 – LITERATURE OVERVIEW AND CONCEPTUAL FRAMEWORK

2.1. Brand equity

Over the years, several authors have been studying the importance of brand equity and its repercussions on the identity of brands. It has already been advanced that the conception of brand equity is fundamental for brands to define their identity and to differentiate their products from the competitors, enabling consumers to feel connected with the organization and choosing them as their favorite brand (Keller, 1993; Yoo, Donthu, Lee., 2000). Furthermore, scholars seem to agree that brand equity has a set of assets and liabilities that generate value to a brand (Aaker, 1991), and it covers issues as consumers' perceptions and its effects on purchases and brand revenues. However, this topic is still controversial in the research field since there is not a universal form of defining and measuring it.

The literature presents two approaches of measuring and defining brand equity: a) financial value (Mahajan, Rao, and Srivastava, 1994), or b) the consumer-mindset (Aaker, 1991; Kapferer, 1991; Keller, 1993). The first approach focuses on financial metrics, such as Net Present Value, Cash Flows, and future brand potential (Simon and Sullivan, 1993). In this perspective, high equity brands are the ones with high stock returns (Aaker and Jacobson, 1994). The second approach is an evaluation based on the customers' perspective, which can recall the customer-based equity created by Keller (1993).

Brands aim to achieve the highest equity possible through marketing mix activities that affect the consumer perspective of the brand (Kapferer, 2014). For instance, if consumers react more (vs. less) to a promotion on social media, the more positive (vs. negative) is the customer-based brand equity (Keller, 1993). To evaluate the customer-based brand equity, Keller presents a conceptual framework from the perspective of the consumers, stating that strong brands are well succeeding in four main domains: brand awareness, brand image, brand responses, and brand relationships. Moreover, a brand perceived by the consumers as strong creates an advantage for companies, since consumers are willing to pay a premium price for it (Starr and Rubinson, 1978).

Several other authors have defined brand equity as a variable depending on various influencers. Dodds, Monroe, and Grewal (1991) suggested that brand equity depended on the brand name, store name, and price. These three variables affect the responses of the customers to brands initiatives and an alternative to measuring them is through the willingness to buy the product and the consumers evaluation of perceived quality and value. Yoo, Donthu, and Lee (2000) supported Doods' claims adding the positive correlation between price and quality. However, these authors also suggest that price does not have any influence on loyalty cues,

which can also be an evaluator of brand equity (Chaudhuri and Holbrook, 2001). Undeniably, evaluating the equity of a brand showed to be relevant once people are willing to pay premium prices for high equity brands (Gupta and Cooper, 1992) providing these a higher margin to operate.

Brand attitudes (Wilkie, 1986), perceived quality and perceived value (Agarwal and Rao, 1996) are also relevant drivers of a brand image, affecting consumer behaviors toward prices decreases, considering they use price as a proxy for the quality (Lichtenstein, Ridgway, and Netemeyer, 1993). This literature shows the relevance of price as a significant attribute of brand equity once customers organize their product category knowledge according to it and also according to the value of a brand (Blattberg and Wisniewski, 1989).

Notwithstanding, literature also showed the likelihood of purchase (Smith and Swinyard, 1983), the purchase intentions (Machleit, Madden, and Allen, 1990) and the willingness to pay (WTP) for premium (Yoo, Donthu, and Lee, 2000; Faircloth, Capella and Alford, 2001) as the primary indicators of brand equity.

When authors mention the willingness to pay for premium, price becomes an adequate evaluator attribute. It has a positive correlation with the likelihood of luxury (Kapferer et al., 2014), which means it has a vital role in the categorization of luxury (Godey, 2016). For example, in the USA, China, Germany, France, and Japan (Godey, 2013) being expensive is the first criteria to define if a brand is luxurious or not, influencing the price people are willing to pay for it.

One of the advanced explanations for consumers' greater willingness to pay for products of high equity brands was the need for the exclusivity, hedonism, and authenticity that customers value (Yeoman and McMahon-Beattie, 2011). A second explanation is that consumers are getting more materialistic, increasing their appreciation for higher status when compared to other features (Eastman et al., 1997). In fact, many customers buy from luxury brands as a way to improve their social status both internally with an augmentation of self-respect and self-esteem, and externally for others' approval (Truong et al., 2008), increasing the probability of choosing high instead of low equity brands.

To summarize, although these two co-existing perspectives (financial and customer-based) are the most used to evaluate brand equity, both of them refer to brands' strength. The prices of products and their perceived value are responsible for the level of luxury, which is a strength measurement. Also, the stronger a brand is, the higher the consumers' willingness to pay for their products.

2.2. Price promotions

Research on sales promotions has been promoted since the decade of the 1990s as a way to understand the impact of sales strategies on consumers' purchase intentions. Indeed, an immediate price reduction affects the consumers' choices (Alvarez and Casielles, 2005). For instance, lower prices might lead consumers to select different brands over their habitual one.

There are several reasons for brands to adopt OPS. It may be to get rid of old inventory for reducing costs, to promote their brand, to achieve more customers, to drive more traffic to the store/website or to respond to a competitor initiative. Literature explored price discrimination based on the willingness to pay (Rao, 1991) as an explanation for brands to adopt these strategies.

According to Hess and Gerstner (1992), there are two types of promotions, pull and push. The first refers to trade deals, which are temporary price reductions, while the second relates to coupons and rebates, for example. These authors studied the difference between sales promotions framing it in two different segments (customers willing to pay high prices and customers willing to pay low prices), to conclude which benefits the retailer, the manufacturer, and the consumers. The results showed both customers and retailers (vs. manufacturer) prefer sales promotions that are motivated by pull rather than push strategies. Subsequently, brands tend to adopt more frequently price reductions instead of coupon or rebates to attract consumers and grow sales.

Furthermore, the attractiveness of the promotions depends on the amount saved in the purchase which is related to the way of presenting the price reductions. Showing an advertisement in dollars (absolute term) is also more attractive for the expensive products, while percentage promotions (relative term) are preferred for the low-price products (Chen et al., 1998). For instance, a 10% reduction may not be enough to change customers' purchase intentions in low-priced products as well as framing the offer in dollars amount needs to be above a threshold internally defined by consumers to change their intentions. Even if consumers perceive the price promotions as worthful, it might not be sufficient to modify consumers' behavior (Alvarez and Casielles, 2005). Additionally, in Chen's studies (1998), offering coupons change the perceptions and purchase intentions of the customers. Perhaps consumers might perceive coupon as more exclusive, having a positive impact on the brand image (Kapferer et al., 2014).

Moreover, the frequency of adopting OPS also impacts the perceptions of the consumers. Frequent price promotions made by low equity brands are typically short-term duration, such as special sales, coupons, cents-off deals, rebates, and refunds. In a short-term perspective, lowering the price increases the value of products (Dodds, Monroe, and Grewal,

1991) and the effectiveness of the promotion. However, price reductions jeopardize brand equity from a long-term perspective, despite the immediate short-term financial gain (Yoo, Donthu, and Lee, 2000). Research on the long-term impact of the sales promotions suggests several negative drawbacks.

First, the frequent use of price promotions will change consumers' motivations to buy from a category. Therefore, consumers will wait for future price reductions to buy the product (Nijs et al., 2001), and they will buy fewer quantities (Mela et al., 1999). Together, these consequences translate into lower margins to retailers.

Second, the frequent use of price promotions makes consumers less sensitive to it, decreasing their effectiveness (Nijs et al., 2001) and the credibility about its offers (Gupta and Cooper, 1992).

Third, price promotions do not enhance the strength of brand association, because customers tend to think primarily about the price and not about the utility provided by the brand (Yoo, Donthu, and Lee, 2000), which it is not useful to enhance the brands' equity.

Fourth, sales promotions aim to enhance consumers' purchase intentions, but this requires considering every consumer to have a minimum value needed to change their choice (Gupta and Cooper, 1992), which is not always easy to figure out and most of the times demand additional costs.

Besides the duration, previous evidence shows another set of variables that impact the effectiveness of promotions. For instance, customers engage more with perishable products since the usage rate is higher (Ailawadi and Neslin, 1998) and both short- and long-term promotions are more useful for that type of products. Also, the fact of the product under price reduction being new or not also influences the effectiveness of the promotion, especially in short-term strategies. This preference seems to be driven by the fact that new products attract more customers, making them change their purchase behavior (Dekimpe et al., 1997). Finally, another relevant variable is the competitive structure of the market since both monopolists, and companies in competitive markets may benefit the short-run effectiveness of sales promotion (Nijs et al., 2001).

Overall, this point state sales promotions to have several advantages, especially for low equity brands that enjoy from frequently adopting these strategies. Also, presenting price reductions in absolute terms is preferred for high equity products while percentage reductions are optimal for low equity. However, there are also some disadvantages when it comes to adopting these strategies. As previously stated, besides sales promotions negatively affect high equity brands, they might even lead low equity brands to lose their effectiveness in a long-term

perspective, since customers become less sensitive and tend to buy fewer quantities or wait for further promotions.

2.3. The effect of promotions on the consumers' perceptions

High and low equity brands cannot adopt the same OPS since they have a self-definition function responsible for fulfilling consumers needs of identification (Bhattacharya and Sen, 2003) that drives their adoption process. Therefore, they adopt different strategies to be coherent with the image they want to transmit, expecting to positively affect consumers' behaviors (Gupta and Cooper, 1992).

High equity brands should not be accessible to mass customization, and that can explain the lack of sales promotions on their Facebook pages. The policy taken for high equity brands are more related to advertising spending, good store image, and high distribution intensity (Yoo, Donthu, and Lee, 2000).

The literature presents some examples of the negative impact on consumers' perceptions of luxury brands regarding price reductions (Kapferer et al., 2014) reinforcing that the feeling of losing exclusivity might be an explanation for high equity brands to not frequently adopt sales promotions strategies. Besides, it can damage the perceived value of the brand as the new price enables more people to access it (Kapferer et al., 2014). Another reason found against promotions in high equity brands was the inconsistency with the perceived quality and the status of the brand. As the perceived quality, value, and image influences brand equity (Agarwal and Rao, 1996; Yoo, Donthu, and Lee, 2000), damaging one of these variables is expected to negatively affect their equity.

Contrarily, low equity brands adopt sales promotions strategies on SMN to arouse the interest of customers in the product and increase the probability of purchasing, by enhancing their perceptions (Della Bitta, Monroe, and McGinnis, 1981).

2.4. Sales promotions on social media networks

Due to the growth of e-commerce in the latest years, brands are giving higher importance to their SMMS, including sales promotions. Besides, studies have shown price promotions to impact the brands' performance (Rapp, Beitelspacher, Grewal and Hughes, 2013).

Admittedly, to perform in social media, managers need to know their users and predict their reactions concerning online promotions. Under such circumstances, the existing studies about consumers' online activities and their preferences help managers adapting and optimizing their campaigns. For instance, research about the impact of traditional marketing on online

consumer activities (Srinivasan, Rutz, J. Pauwels, 2016) suggests a framework to trace the consumers' purchase process based on three primary stages – cognitive (learning), affective (feeling), and conative (behavior), responsible for defining the influential purchasing factors. Furthermore, the stages identified by Srinivasan and his colleagues (2016) can be measured on Facebook by cognitive or affective (Laran, Juliano, and Tsiros, 2013) consumer activities such as paid search clicks, website visits, likes, and even positive or negative comments that provides a way to measurement the Inditex of consumers' engagement.

Besides, Chandon and his colleagues (2000) created a framework concerning the benefits provided by monetary and non-monetary promotions. This framework predicts the type of products for which price reductions are effective, through the analysis of three utilitarian and three hedonic benefits. Regarding the practical benefits, monetary savings are not the only advantage but also the increase in quality and convenience, while the hedonic benefits prioritize value expression, exploration, and entertainment characteristics. Moreover, sales promotions proved to increase the market share of high-equity brands, and monetary discounts proved to be more useful for functional rather than hedonic products.

Understanding the difference between utilitarian and hedonic products in consumers shopping behavior is relevant to optimize the OPS on social media. This topic has been the subject of several studies since it explains the consumption phenomenon (Babin, Darden, and Griffin, 1994; Childers et al., 2001). Utilitarian products lead consumers to think objectively and make them pass through a decision-making process based on an overall evaluation of the product, by considering all the available information. Contrary, a hedonic product arouses the emotional side of consumers, making them buy it impulsively, due to the enjoyment and fun the product provides (Babin, Dardin, and Griffin, 1994; Childers et al., 2001).

Undoubtedly, the findings of the hedonic consumption emphasizing characteristics as sounds and visual images (Hirschman and Holbrook, 1982), including product images or sampling music, which knowledge might be useful to optimize sales promotions on SMN.

2.5. User-generated content on Facebook

The main reason of Facebook success for brands is building social experiences by enabling the development of relationships with customers, enhancing their reputation, and connecting people to organizations (Rapp, Beitelspacher, Grewal, & Hughes, 2013). Through this social network, brands create communities that leverage consumer behaviors towards purchase decisions, which is possible since people use this network to help them deciding (Bhattacharya & Sen, 2003). They also express their opinion about brands with others, increasing the likelihood of word-of-mouth (WOM). Previous work has investigated the effect

of WOM communications on online communities, showing communication form, character narrative, communicational norms, and marketing promotion elements to be the key for the success (Kozinets et al., 2010). Brand managers need to consider these four factors when defining the type of promotions suitable for their community and its rules on Facebook.

UGC is one of the most common approaches to measuring the success of a campaign on Facebook since it expresses the degree of consumer engagement. The type of brand-related UGC created varies according to social media under analysis, but, in all of them, they had a vital role in consumers' perceptions (Smith, Fischer, and Yongjian, 2012). Some people engage with brands on Facebook as a function of a self-presentation through user-produced content (Zywica and Danowski, 2008; Smith, Fischer, and Yongjian, 2012), which means they can use the content created by brands as a way of expressing themselves.

Most pages of brands on Facebook adopt proactive SMMS, encouraging people to interact with them (Muñiz and Schau, 2007). Also, they contain information about new products, coupons, price promotions, and events, enabling consumers to talk about them in their pages and share them with others (Smith, Fischer, and Yongjian, 2012).

Furthermore, Facebook has an advantage of allowing their followers to express their disagreement with the posts by liking, commenting, sharing it or another type of interactions, representing a metric for brands to measure their effectiveness and popularity (De Vries, Gensler, and Leeflang, 2012).

2.6. Conclusions and hypotheses formulation

The type of content created by brands in social media campaigns influences their performance. Indeed, campaigns regarding sales promotions have an impact on consumers' choice process and brands' equity. High equity brands are negatively affected by adopting price promotional campaigns, while low equity brands beneficiate of those strategies.

Little research studied the impact of promotional content has on brands' performance as a function of brand equity, providing confidence on the innovative insights to the existing knowledge. Moreover, research about the impact of the following variables: brand equity, promotional frequency, promotional discount, and promotional type on brands' performance is still a field to explore.

Consistently with the previous findings, I predict a positive impact of frequent sales promotions for low equity brands on the performance and a negative impact of the frequent sales promotions for high equity brands on the performance, even after controlling for the market structure, the industry, and the perishability of the product.

Additionally, promotional discounts (high vs. low) are also likely to enhance the Facebook posts performance of low equity brands, contrary to high equity brands.

Although promotional content assumed to enhance the performance of brands when compared to other types of content, the different types of promotions are expected to perform differently. In this case, percentage discounts are expected to perform better than cents-off deals.

Considering the two research questions formulated in Chapter I and according to the literature overview, this dissertation addressed the following research hypotheses:

H1: The frequency of price promotions affects the brand performance, on Facebook, as a function of brand equity.

H1a: Highly (vs. low) frequent price promotions on Facebook decreases the performance of high equity brands.

H1b: Highly (vs. low) frequent price promotions on Facebook increases the performance of low equity brands.

H2: The amount of price reduction affects the performance as a function of brand equity, on Facebook.

H2a: For high equity brands, any promotional discount (high vs. low) decreases the performances.

H2b: For low equity brands, any promotional discount (high vs. low) increases the performances.

H3: Facebook posts containing sales promotions lead to an increase in the performance of brands.

H3a: Facebook posts containing percentage discounts (vs. cents-off deals) lead to an increase in the performance of brands.

CHAPTER 3 – METHODOLOGY

3.1. Research approach

Two different approaches can be undertaken in the research field, deductive or inductive. This dissertation adopts the first approach since the literature insights lead to believe that there is a relationship between the independent variables and the performance. Also, it enabled to construct the hypotheses to test (Robson, 2002) and to quantitatively measure.

There are three types of research approaches used to find data for testing the hypotheses and formulate conclusions: descriptive, exploratory and explanatory (Saunders, Lewis, and Thornhill, 2009). This dissertation adopted the descriptive research, where secondary data about sales promotions were collected through the official Facebook brand pages and used to infer about possible reasons for them to achieve success. Secondary data also enabled to develop a theory to understand the phenomena behind the sales promotions on SMN.

Furthermore, based on the literature overview and the research methods of Saunders, Lewis, and Thornhill (2009), it was possible to get insights about the promotional factors that influenced the performance on Facebook, taking into account equity of brands.

3.2. Research methods

3.2.1. The selection of brands for the study

The literature suggests there are two approaches to evaluate brand equity: financial and customer-based. Table 1 presents the several variables identified in the literature overview chapter that define brand equity in the consumer-based perspective.

Table 1 - Evaluator variables of brand equity from the consumer-based perspective.

Variable	Author
Brand Name	Dodds, Monroe and Grewal (1991)
Brand Price	Dodds, Monroe and Grewal (1991); Aaker (1991)
Loyalty	Dodds et. al (1991); Chaudhuri and Holbrook (2001)
Likelihood of purchase	Smith and Swinyard (1983)
Purchase intentions	Machleit, Madden, and Allen (1990)
WTP for premium	Yoo et., al (2000); Faircloth, Capella and Alford (2001)
Brand Awareness	Aaker (1991); Keller (1993); Agarwal and Rao (1996)
Perceived quality	Aaker (1991); Agarwal and Rao (1996)
Perceived value	Dodds, Monroe and Grewal (1991); Agarwal and Rao (1996)
Exclusivity/ Authenticity	Dodds, Monroe and Grewal (1991); Agarwal and Rao (1996)
Brand Relationship	Keller (1993)

For undertaking this approach, information about the consumer-based equity would be necessary to gather through primary qualitative data to understand how consumers perceive the brands in the different fields. Furthermore, it could lead to some biases since consumers who have never experienced purchasing from a particular brand, would use price as an indicator of quality. As a matter of fact, when people do not know a brand, they tend to associate lower prices with lower quality and status (Dodds, Monroe, and Grewal, 1991).

Therefore, and because the information is available from credible sources, this dissertation assumed the financial approach of defining brand equity. Table 2 presents the selected brands and their economic values.

Table 2 - Financial values of brands.

Brand	Financial Value	Brand	Financial Value
High equity brands		Low equity brands	
McDonald's	$ 41.4 B	Continente	$417 M
IKEA	$ 14.5 B	Pingo Doce	$946 M
Lidl	$ 8.5 B	FNAC	$1.69 B

Notes. All the data in this table was gathered from Forbes (2018), Brand Finance (2018), and Mundo das Marcas (2016). The brands not included in the Forbes rating or the Annual report on the world's most valuable retail brands are considered low equity.

Besides the brand value, the choice of the six brands had in consideration the type of strategy they adopt on Facebook. Most high equity brands do not post sales promotion on Facebook. Thus, this study only includes the brands who presented promotional posts on their pages.

3.2.2. Data collection

The brands included in the study are from several categories: furniture, grocery, restoration, and electronic retail. After choosing the brands – McDonald's, IKEA, Lidl, Continente, Pingo Doce, and FNAC – ten promotional and ten non-promotional posts of each, a total of one hundred and twenty publications from 30th October 2017 to 20th October 2018, were empirically analyzed.

The UGC, namely the number of likes/reactions, shares and comments of each post brand were collected and compiled (Annexes 1 and 2).

It is relevant to refer that since 2016, Facebook introduced new reactions – love, haha, wow, sad, and angry – as an extension to the like button, to people express their disagreement with the content shared. However, the Facebook algorithm counts all reactions as likes (Hubspot, 2017). Therefore, in this study, they were attributed to the same score.

The information about the reaction of the customers was collected from the Portuguese official brand pages and aimed to measure the customers' level of engagement with the promotional posts that, afterward, helped to measure the brands' overall performance on Facebook.

With the goal of taking some conclusions about the preferences of the consumers regarding the content shared by brands on social media websites, this research included a comparison between promotional and non-promotional posts and a comparison between two sales promotion types (percentage discounts vs. cents-off deals).

3.2.3. Independent variables

The research hypotheses required measuring the effects of the variables described in Table 3 on the Facebook brands performance.

Table 3 - Classification of the independent variables.

Variable	Type	Level of measurement	Categories
Promotional frequency	Metric, continuous	Interval	High Low
Brand equity	Non- metric, categorical	Nominal	High Low
Promotional discount	Non- metric, categorical	Interval	High (≥ 50%) Low (< 50%)
Promotional type	Non- metric, categorical	Nominal	Cents-off deals Percentage discounts

3.2.3.1. Promotional frequency

The frequency is a categorical variable with two levels: high and low. This variable translates into the number of times that a brand posted sales promotions on their Facebook pages. The study considered brands to post frequently if, in successive twelve posts, at least one is about price discounts. Otherwise, they were classified as having low-frequency posting times.

3.2.3.2. Brand equity

High and low equity brands were defined according to the preferences of their users. Specifically, high equity brands were brands categorized as having a higher preference and financial value, whereas low equity brands were those brands categorized as having a lower preference and financial value.

3.2.3.3. Promotional discount

The promotional discounts variable is also categorical and refers to the amount of price reduction. In this study, a high promotional discount admitted reductions equal or higher than 50% of the total value, and a low promotional when is less than 50%, either in absolute or relative terms.

3.2.3.4. Promotional type

Types of promotions is a categorical variable that includes two different categories: cents-off deals (promotions presented in absolute values), and percentage discounts (promotions presented in relative values). Other types of price reductions such as rebates, refunds, and media distributed coupons were not included in the study since most of this exclusive information is sent directly to customers. Typically, brands often adopt this particular SMMS because customers prefer those exclusive offers over the inclusive (Barone and Roy, 2010), like being available to everyone on Facebook.

3.2.4. Dependent variable

3.2.4.1. Performance on social media networks

Performance of the selected brands was measured through two KPIs (exposure and engagement) as defined by Thackeray, Neiger, Smith, and Van Wagenen (2012) and calculated according to data gathered from the posts of brands. More precisely, these KPIs were evaluated through the UGC coming from the online consumer activities (Srinivasan, Rutz, J., and Pauwels, 2016), particularly the likes and reactions, shares, comments, and the number of Facebook followers. Table 4 presents the KPIs measurement method.

Table 4 - Key performance indicators (KPI) of brands on Facebook.

KPI	Definition	Metrics
Exposure	Number of people who follow the Facebook brand page.	The number of Facebook pages followers.
Engagement	Share Rate - Ratio of shares according to the audience size. Talk Rate - Ratio of comments according to the audience size. Love Rate - Ratio of likes according to the audience size.	Number of people who interact with the posts: Share rate = $\frac{\text{Total of post shares x 3}}{\text{nº of exposure}}\ x\ 100$ Talk Rate= $\frac{\text{Total of post comments x 2}}{\text{nº of exposure}}\ x\ 100$ Love Rate = $\frac{\text{Total of post likes x 1}}{\text{nº of exposure}}\ x\ 100$
Performance	Sum of the engagement rates.	Performance Rate = Share Rate + Talk rate + Love Rate

After gathering all the information about the UGC from the one hundred and twenty posts, I considered three rates: *share*, *talk*, and *love*, to measure the level of engagement.

Each type of interaction was scored according to the level of its engagement defined by Peters and his colleagues (2013): like or reaction (score = 1), share (score = 2), and comment (score = 3). Afterward, the engagement of each UGC was summed up and presented in Tables 5 and 6 for high and low equity brands, respectively. Then, the values of the three rates facilitated to calculate the performance of promotional and non-promotional (Annexes 3 and 4) posts. Because the final index is a composite variable averaging the different KPIs with different units of measurement, all the indicators were standardized before the computation of the performance Inditex. Thus, higher values represent greater performance levels.

Table 5 - High equity brands performance of promotional posts.

High equity brand	Post	Exposure	Engagement			Post perform.	Brand perform.
Promotional			Share rate	Talk rate	Love rate	Promotional	
McDonald's	1	78 692 913	0.00005	0.00003	0.00018	0.0003	0.003
	2		0.00022	0.00019	0.00254	0.0029	
	3		0.00204	0.00056	0.00267	0.0053	
	4		0.00013	0.00019	0.00085	0.0012	
	5		0.00015	0.00011	0.00165	0.0019	
	6		0.00010	0.00006	0.00152	0.0017	
	7		0.00022	0.00026	0.00318	0.0037	
	8		0.00101	0.00142	0.00369	0.0061	
	9		0.00032	0.00028	0.00165	0.0023	
	10		0.00019	0.00032	0.00229	0.0028	
IKEA	11	27 296 228	0.00044	0.00011	0.00773	0.0079	0.004
	12		0.00002	0.00007	0.00240	0.0025	
	13		0.00013	0.00009	0.00207	0.0023	
	14		0.00037	0.00017	0.00696	0.0075	
	15		0.00013	0.00001	0.00126	0.0014	
	16		0.00044	0.00011	0.00733	0.0079	
	17		0.00011	0.00001	0.00053	0.0007	
	18		0.00021	0.00008	0.00586	0.0062	
	19		0.00012	0.00006	0.00051	0.0007	
	20		0.00016	0.00021	0.00181	0.0022	
Lidl	21	1 066 113	0.00113	0.00056	0,00947	0,0112	0.042
	22		0.00929	0.00131	0,19698	0,2076	
	23		0.00056	0.00169	0,01444	0,0167	
	24		0.00056	0.00056	0,01294	0,0141	
	25		0.00028	0,00019	0,00854	0,0090	
	26		0.00084	0,00150	0,00985	0,0122	
	27		0.00169	0,00038	0,01810	0,0202	
	28		0.00169	0,00094	0,01398	0,0166	
	29		0.00056	0,00244	0,01116	0,0142	
	30		0.00478	0,00150	0,09380	0,1001	

Table 6 - Low equity brands performance of promotional posts.

High equity brand	Post	Exposure	Engagement			Post perform.	Brand perform.
Promotional			Share rate	Talk rate	Love rate	Promotional	
Continente	31	2 003 023	0.00015	0.00000	0.00090	0.0010	0.052
	32		0.00090	0.00020	0.00160	0.0027	
	33		0.00015	0.00000	0.00404	0.0042	
	34		0.00270	0.00300	0.02112	0.0268	
	35		0.01168	0.00399	0.19970	0.2154	
	36		0.00419	0.00130	0.00984	0.0153	
	37		0.00225	0.00150	0.02516	0.0289	
	38		0.00240	0.00140	0.01363	0.0174	
	39		0.02351	0.00998	0.17474	0.2082	
	40		0.00015	0.00030	0.00250	0.0029	
Pingo Doce	41	375 177	0.08876	0.02292	1.14613	1.2578	0.904
	42		0.03119	0.04105	0.31985	0.3921	
	43		0.05118	0.01972	0.85293	0.9238	
	44		0.07357	0.02772	0.98620	1.0875	
	45		0.11674	0.03732	0.31985	0.4739	
	46		0.25748	0.10822	0.77297	1.1387	
	47		0.01919	0.00320	0.11861	0.1410	
	48		0.18871	0.04851	0.87958	1.1168	
	49		0.33664	0.09809	1.59925	2.0340	
	50		0.05837	0.01919	0.39981	0.4774	
FNAC	51	731 098	0.00082	0.00219	0.00369	0,0067	0.014
	52		0.00000	0.00082	0.00219	0,0030	
	53		0.00000	0.00027	0.00109	0,0014	
	54		0.00821	0.00684	0.02407	0,0391	
	55		0.00000	0.00027	0.00274	0,0030	
	56		0.00739	0.00246	0.01874	0,0286	
	57		0.00164	0.00082	0.00410	0,0066	
	58		0.00164	0.00219	0.01354	0,0174	
	59		0.00410	0.00109	0.01806	0,0233	
	60		0.00082	0.00109	0.00752	0,0094	

3.2.5. Control variables

As have been pointed in the literature chapter, other uncontrolled factors called covariates are expected to have an impact on the performance of brands on Facebook. Table 7 presents those covariates, according to Nijs and his colleagues' studies (2001), that might affect the performance and the explanatory power of the independent variables.

The covariates are assumed to be linearly related to the performance, increasing the power of the statistical tests but reducing within-group variance (Tabachnick & Fidell, 2001). In some cases, the explanatory power of the covariate is so high that reduces or even eliminates the significance of the independent variables. For these reasons, in this study, the effects of these three variables were held constant by performing ANCOVA tests, to isolate the impact of the independent variables on the performance and yield more precise estimates.

Table 7 - Classification of the control variables.

Variable	Categories
Market Structure	Monopoly
	Oligopoly
	Competitive market
Perishability	High
	Low
Industry	Furniture
	Grocery
	Food
	Electronic retail

3.2.5.1. Market structure

Table 8 summarizes the market structure of each brand included in the study, defined according to their actual competitors.

Table 8 - Classification of the market structure of brands in the Portuguese market.

Brand	Competitors		Market Structure
McDonald's	Burger King	Starbucks	Competitive market
	KFC	Pizza Hut	
	Subway	Domino's	
IKEA	Amazon	Walmart	Monopoly
	Wayfair		
Lidl	Aldi	Pingo Doce	Competitive market
Continente	Continente	Mini Preço	
Pingo Doce	Auchan (include Jumbo)	Lidl	
FNAC	Worten		Oligopoly
	Media Market		

Note. All the data in this table was gathered from Forbes (2012), Statista (2018), and Marketing 91 (2018).

McDonald's – All the fast food brands operating in the Portuguese market were considered competitors. In this context, companies are described as fast food if they offer high-speed service to customers.

IKEA – Although IKEA was found out to have some relevant competitors like Amazon, Wayfair, and Walmart. However, this study only considers competitors with physical stores in Portugal. Subsequently, IKEA is considered a monopoly since there is no other company with the same model business in Portugal.

Lidl, Continente, and Pingo Doce – All the grocery stores operating in Portugal were considered.

FNAC – Although FNAC has a broad product portfolio and operates in several business areas like books, movies, sports and health, musical instruments, and others, this study only considers the electronic products. Therefore, all the companies that have a physical store and operate in this industry in Portugal were considered competitors.

3.2.5.2. Perishability of the product

The perishability of the product regards their lifetime. Short lifetime products are the ones for immediate or quick consumption, for instance, meats, fruits, ice-creams, pharmaceuticals, while long lifetime relates to products like smartphones, televisions, and furniture.

3.2.5.3. Industry

Table 9 presents the brands and the classification of their industry.

Table 9 - Classification of the industry of brands.

High equity brand	Industry	Low equity brand	Industry
McDonald's	Restoration	Continente	Grocery
IKEA	Furniture	Pingo Doce	Grocery
Lidl	Grocery	FNAC	Electronic retail

CHAPTER 4 - RESULTS AND DISCUSSION

4.1. Data Analysis

To answer the research questions formulated in Chapter I, the collected data regarding the brand equity, the promotional frequency, the promotional reduction, the promotional type, the market structure, the perishability of the product, and the industry were compiled into SPSS datasets, and analyzed by the execution of parametric tests (Razali and Wah, 2011), namely ANOVAs and ANCOVAs.

The execution of the ANOVAs and ANCOVAs tests required the fulfillment of six assumptions: a) the dependent variable should be metric, b) the independent variable should be non-metric, c) there is no relationship between the observations, d) there should be no significant outliers, e) the dependent variable should follow approximately normal distribution, f) there needs to be homogeneity of variances.

The assumptions of a) to c) were verified in all cases. To study the assumption d), we analyzed the box plots of the performance provided by SPSS, and it was identified two outliers of each brand equity. Thus, they were not included in the analysis of the tests, and the sample size became fifty-six, $n = 56$ (twenty-eight cases for low equity brands and twenty-eight for high equity).

Second, to test the assumption e), we performed the Shapiro-Wilks test (Shapiro & Wilk, 1965), rejecting the null hypothesis stating the performance scores were not statistically significantly different from the normal distribution. In other words, the normality assumption was violated.

However, there were two reasons against the results that gave confidence to this study to assume the performance variable followed a normal distribution. First, due to the skewness of and kurtosis values, which are respectively 1.694 and 1.526 for low equity brands and .926 and -.226 for high equity brands (Annex 5). This assumption was valid since values between -2 and +2 are acceptable for a normal univariate distribution (George & Mallery, 2010). Second, according to the Central Limit Theorem (Field, 2013), the distribution of the means becomes normal as the number of samples increases, regardless of the shape of the population distribution. Hereby, sample sizes containing a large number of observations, which is assumed to be thirty or above, can also be considered as following a normal distribution. Thus, the distribution of the performance was assumed to be normal.

Third, to test the assumption f), Levene's tests were performed, and the results rejected the null hypothesis, meaning that variances are founded to be significantly different (unequal)

across the groups. However, since high and low equity brands' samples had the same sizes (n = 28) this assumption was overcome (Keppel et al., 1992).

During the analysis, the results of the parametric tests proved the level of significance, was not significant or marginally significant (p-value between .05 and .10) (Pritschet et al., 2016) in the following cases: the effect of promotional type and promotional discount on performance as a function of brand equity (high vs. low).

However, the level of significance only provides information about the difference between the groups within the independent variables. Then, since the level of significance depends on the sample size, and higher sample sizes are most likely to present a statistical significance (Sullivan & Feinn, 2012), even if the results are non-significant, the analysis of their effect sizes were made with the aim of finding their proportion of variance on the performance.

Additionally to p-values, I considered two extra approaches to analyze statistical significance: a) the partial eta squared (η^2_p) and b) the Cohen's d (Cohen, 1973), both measures of the effect size, and widely used in psychological research (Lakens, 2013). The partial eta squared values measures how much variance of the dependent variable is explained by the independent variable, while Cohen's d calculates the difference between the means of the groups, enabling the classification of the effect size.

It is important to refer that the level of significance considered for all the following analysis is $\alpha = .05$ (Tabachnick & Fidell, 2001).

4.2. The effect of brand equity and frequency on social media performance

To test the hypothesis H1a) and H1b) that relates the effect of brand equity (high vs. low) and promotional frequency (high vs. low) on brands' Facebook performance, we conducted a Univariate ANOVA, entering brand equity and promotional frequency as the between-subjects factors and performance as the dependent variable.

The results showed a main effect of brand equity, $F(1,52) = 6.01$, $p = .018$, $\eta^2_p = .104$, $d = 0.681$, a main effect of promotional frequency, $F(1,52) = 6.04$, $p = .017$, $\eta^2_p = .104$, $d = 0.681$, both qualified by an interaction effect of brand equity by promotional frequency, $F(1,52) = 5.30$; $p = .025$, $\eta^2_p = .093$, $d = 0.640$.

Simple pairwise comparison revealed that for high equity brands with low frequency in their promotional campaigns, performance of the brands ($M = 0.01$, $SD = 0.08$) did not significantly differ from high frequency promotional campaigns ($M < 0.01$, $SD = 0.06$, $p = .916$). However, as predicted, for low equity brands, lower frequency of promotions increased

significantly brands' performance (M = 0.35, SD = 0.06) when compared to high frequency promotions (M = 0.01, SD = 0.08, p = .001).

Furthermore, the interpretation of the effect sizes showed the brand equity, the promotional frequency, and their interaction between them to have an intermediate effect on the performance (Annex 6).

To visually observe the effect of the promotional frequency on the performance, as a function of brand equity, we constructed Figure 1.

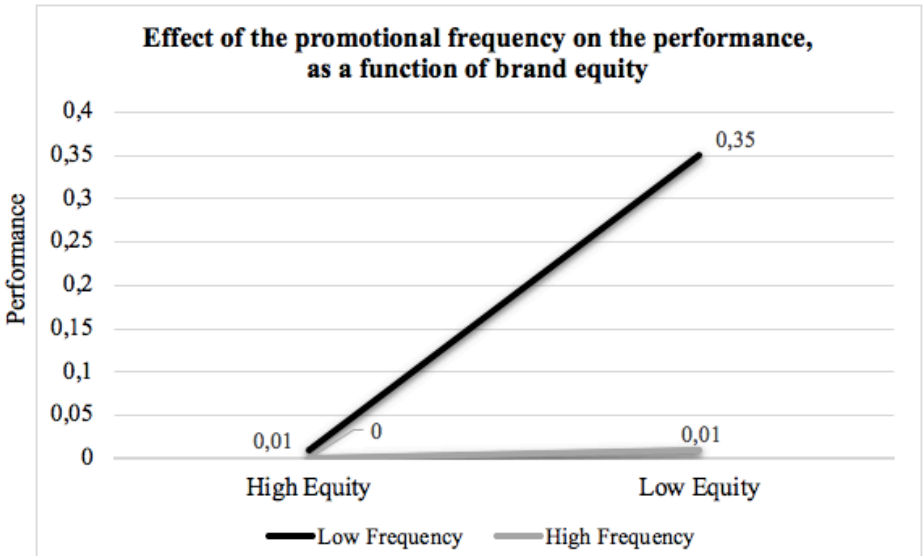

Figure 1 - Comparison of the Facebook performances according to posting frequency (high vs. low), as function of brand equity (high vs. low).

Findings show that over-promoting on Facebook damaged the performance of brands. Additionally, the performance of brands with high financial values (e.g., McDonald's) is small, demonstrating that sales promotions do not provide better performance levels. Notwithstanding, for low equity brands (e.g., Pingo Doce), besides over-promoting harming their performance, having an adequate frequency posting strategy provide them higher performance values, which indicates that their customers value promotional content when sparingly used. Thus, hypothesis 1a) was confirmed whereas 1b) was rejected.

Next, we conducted an ANCOVA, using the same factors and the dependent variable, but also entering the market structure, the perishability of the product and the industry type as control variables. The interaction effect of brand equity by promotional frequency was still statistically significant even after controlling the market structure, $F(1,51) = 5.15$, $p = .028$, $\eta^2_p = .092$, $d = 0.637$, the perishability of the product, $F(1,51) = 5.03$, $p = .029$, $\eta^2_p = .090$, $d = 0.629$, and marginally significant after controlling the industry, $F(1,51) = 3.22$, $p = .079$, $\eta^2_p = .059$, $d = 0.501$, (Annex 7). Also, there was no significant impact on its effect size (Annex 8).

4.3. The effect of brand equity and promotional discount on social media performance

To test hypotheses H2a) and H2b), that relates the effect of brand equity (high vs. low) and promotional discount (high vs. low) on brands' Facebook performance, we conducted a Univariate ANOVA, entering brand equity and promotional discount as the between-subjects factors and performance as the dependent variable.

The results showed a main effect of brand equity, $F(1,52) = 4.61$, $p = .036$, $\eta^2_p = .081$, $d = 0.594$, and a marginal main effect of promotional discount, $F(1,52) = 2.88$, $p = .096$, $\eta^2_p = .052$, $d = 0.468$. Although the significance value was not statistically significant for the interaction between promotional discount and brand equity, $F(1,52) = 2.78$, $p = .101$, $\eta^2_p = .051$, $d = 0.464$, its partial eta square and Cohen d values proved it to have an explanatory power on the performance, representing a small effect (Annex 6).

Simple pairwise comparison revealed that for high equity brands with low promotional discounts in their promotional posts, performance of brands ($M = 0.01$, $SD = 0.06$) did not significantly differ from high promotional discounts campaigns ($M = 0.01$, $SD = 0.10$, $p = .984$). However, even though the p-value was not statistically significant for the effect of the interaction between promotional discount and equity, we did find a significant difference in the means of promotional discounts for low equity brands. Subsequently, lower promotional discounts increased significantly brands' performance ($M = 0.30$, $SD = 0.06$) when compared to high promotional discounts ($M = 0.04$, $SD = 0.09$, $p = .019$).

Figure 2 was constructed for a better understanding of the effect of promotional discounts (high vs. low) on the performance, as a function of the equity of brands.

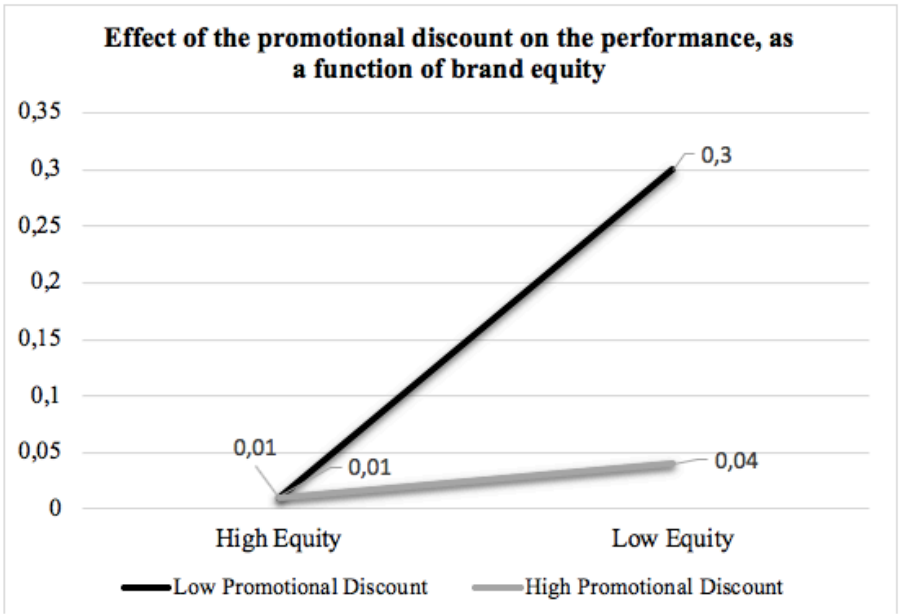

Figure 2 - Comparison of the Facebook performances according to promotional discount (high vs. low), as function of brand equity (high vs. low).

Offering high (vs. low) promotional discounts damaged the performance of brands' equity (high vs. low), which means those price reductions equal or higher than 50% (vs. 20%) does not lead to better performances on SMN, for example. Nevertheless, only low equity brands (e.g., Continente) benefit from offering lower promotional values since brands with higher equities (e.g., Lidl) presented worse performance levels. Thus, hypothesis 2a) was confirmed whereas 2b) was rejected.

After performing the ANCOVA, using the same factors and dependent variable, but also entering the market structure, the perishability of the product and the industry type as control variables, the main effects, and the interaction effect of brand equity by promotional discount were not statistically significant controlling for market structure, $F(1,51) = 2.48$, $p = .122$, $\eta^2_p = .046$, $d = 0.439$, and perishability of the product, $F(1,51) = 2.74$, $p = .104$, $\eta^2_p = .051$, $d = 0.463$, (Annex 9). However, monitoring the impact the industry, a statistical marginally significance of the interaction effect was presented, $F(1,51) = 3.40$, $p = .071$, $\eta^2_p = .062$, $d = 0.514$, and also a growth in its effect size that passed from small to intermediate. (Annex 10).

4.4. Promotional vs. non-promotional performance of posts

To understand whether the type of content is preferred by people on social media, we conducted an ANOVA to compare promotional with non-promotional posts. Table 10 presents the performance of brands for their promotional and non-promotional posts.

Table 10 - Performance of promotional and non-promotional posts of brands.

Promotional posts			Non-Promotional posts		
Equity	Brands	Performance	Equity	Brands	Performance
	McDonald's	0,003		McDonald's	0,003
High	IKEA	0,004	High	IKEA	0,004
	Lidl	0,042		Lidl	0,042
	Continente	0,052		Continente	0,046
Low	Pingo Doce	0,904	Low	Pingo Doce	0,947
	FNAC	0,014		FNAC	0,095

Additionally, Figure 3 shows the differences between promotional and non-promotional posts, enabling a quicker and easier analysis.

Non-promotional posts presented higher values than promotional posts. However, the ANOVA results, $F < 1$, $p = .782$ indicates that there is not a statistical difference between them. Accordingly, promotional content does not increase the performance of brands on social media

networks when compared to non-promotional content as product ads or entertainment posts, for instance, which lead us to reject H3.

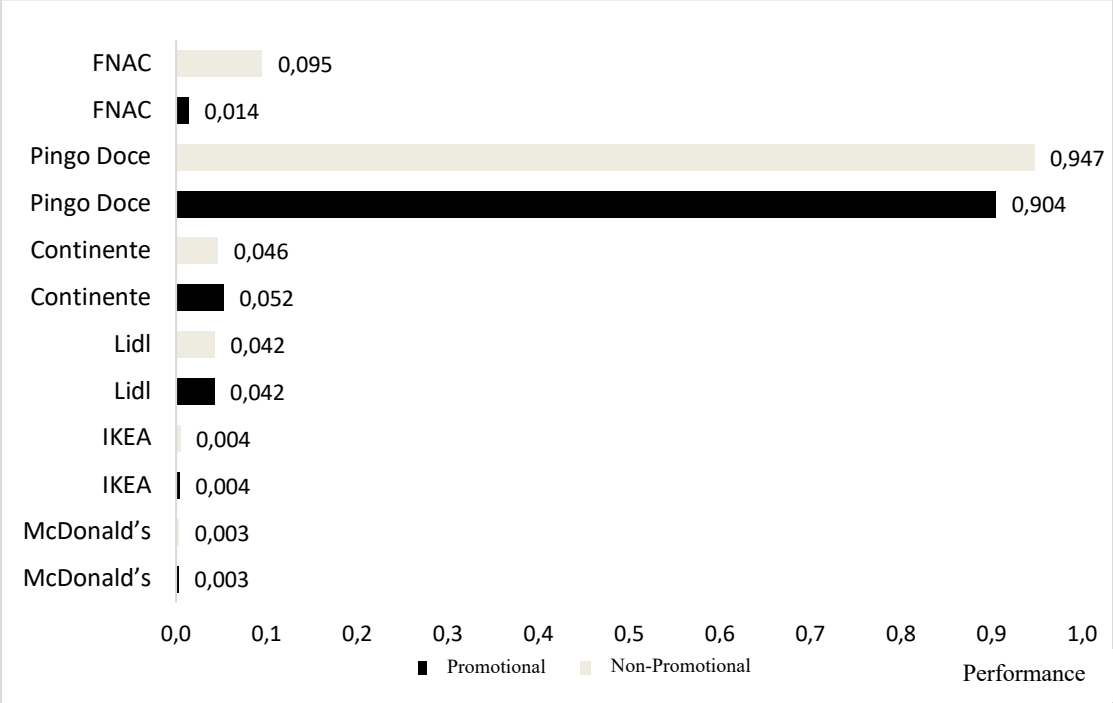

Figure 3 - Comparison of the Facebook performances of promotional and non-promotional posts. Performance standardized values from 0 (low performances) to 1 (high performances).

4.5. The effect of brand equity and promotional type on social media performance

To test the hypothesis H3a) that relates the effect of brand equity (high vs. low) and promotional type (percentage discounts vs. cents-off deals) on brands' Facebook performance, we conducted a Univariate ANOVA, entering brand equity and promotional type as the between-subjects factors and performance as the dependent variable.

The results showed a main effect of brand equity, $F(1,52) = 10.48$, $p = .002$, $\eta^2_p = .168$, $d = 0.899$, but not a statistical main effect of promotional type, $F < 1$, $p = .388$, $\eta^2_p = .014$, $d = 0.238$. Moreover, the interaction effect of brand equity by promotional type was not statistically significant, $F < 1$, $p = .334$, $\eta^2_p = .018$, $d = 0.270$. However, analyzing the partial eta squared and Cohen *d* values, we evidenced the promotional type to have a small effect on the brands' performance.

Simple pairwise comparison revealed that for high equity brands, the performance of brands that presented their discounts in percentage ($M = 0.01$, $SD = 0.09$) did not significantly differ from cents-off deals ($M < 0.01$, $SD = 0.06$, $p = .940$, $\eta^2_p < .001$). Also, for low equity brands, besides brands' performance seemed to differ between percentage discounts ($M = 0.19$, $SD = 0.06$) and cents-off deals, ($M = 0.33$, $SD = 0.10$), the results demonstrated they did not significantly differ from each other ($p = .205$).

In practical terms, if low equity brands (e.g., FNAC) posted two examples of sales promotions: one presenting a percentage value (e.g., 20% discount on a TV that costs 1000€), and the other offering a reduction in an absolute value (800€ as the final price of the same TV), the performance levels of both posts would be the same. Thus, H3a) was rejected.

Next, we conducted an ANCOVA, using the same factors and the dependent variable, but also entering the market structure, the perishability of the product and the industry type as control variables. The interaction effect of brand equity by promotional type was still not statistically significant even after controlling the market structure, $F < 1$, $p = .661$, $\eta^2_p < .001$, $d = 0.127$, the perishability of the product, $F < 1$, $p = .582$, $\eta^2_p < .001$, $d = 0.155$, and the industry, $F(1,51) = 2.36$, $p = .131$, $\eta^2_p = .044$, $d = 0.429$, (Annex 11). Moreover, the interaction no longer presented an impact on the performance (Annex 12).

4.6. Additional analysis

4.6.1. The effect of equity on social media performance – Point-Biserial Correlation

Previous analyses evidenced a significant effect of brand equity on brands performance. Thus, we performed a Point-Biserial correlation to understand the extent which brands equity (high vs. low) was related to brand performance on social media. The correlation between the two variables is negative and significant ($r = - 0.39$, $p = .003$), which means that lower equity brands have a higher performance levels on social media. Moreover, the Pearson's bivariate coefficient was transformed into the coefficient of determination ($r^2 = 0{,}153$) (Hair et al., 2010), indicating that equity explains 15% of the total variation of the performance.

CHAPTER 5 - CONCLUSIONS AND LIMITATIONS

5.1. Main conclusions

Social media networks are, more than ever, complementary to the traditional advertising channels. From the countless advantages, they are particularly relevant to reach a higher number of users in a shorter time, with reduced advertising cost.

Additionally, it is mandatory to have an online presence, forcing them to develop their e-commerce business. However, its management can be challenging to optimize. It seems clear that even though brands need traditional and online channels complementing each other, they must address their pricing strategies differently in both fields. The findings from this dissertation tap into this optimization.

Through Facebook promotional campaigns, I studied the impact of promotional frequency, promotional discount, and promotional type on brands' online performance as a function of brand equity, and still compared the effectiveness of promotional with non-promotional content.

Regarding the first and second research questions of this dissertation, we concluded that over-promoting has several implications for the business depending on the market value of the brand. Although lay people may believe that higher sales promotions lead to a higher engagement from consumers, this may not represent the full story. Throughout my dissertation, I presented evidence showing that when brands over-promote their products (both in frequency and amount of reduction), social media users do not react to the promoted content as much as expected. That happens whether brands are well ranked in the international market (e.g., IKEA) or not so much (e.g., Continente). Also, offering several reduction values (high vs. low) or posting frequency (high vs. low) did not differently affect the performance of high equity brands, while for low equity brands, lower posting frequencies and lower reduction values presented higher performances.

Concerning the third research question, we observed that besides sales promotions provided higher consumers' engagement in the conventional channel, the same was not verified in the online field. The results indicated people equally react to promotional and non-promotional content on social media. Moreover, similarly to the traditional, it was expected consumers preferred percentage over absolute discounts, but I presented evidence proving the type of promotion in social media does not differently influence the performance.

To sum up, this dissertation contributes to the existing literature by adding sales promotion impacts on social media, which differ as a function of brand equity (high vs. low), and for that reason must receive specific attention and customization from managers.

Nevertheless, although promotional posts might lead to higher sales, it also affects brand image and status, which in many cases might be irreversible and lead them to lose customers. Thus, sales promotions should not be the main focus of SMMS but a complement of it.

5.2. Managerial implications

Marketing mix strategies affect how consumers perceive brands (e.g., Kapferer, 1991; Keller, 1993). Before adopting sales promotions, managers can consult this dissertation framework which compiles the benefits and the consequences that must be considered to generate a positive impact on social media performance.

First, before adopting sales promotions, marketers must be aware of their brand equity classification, and decide whether it will be beneficial (vs. detrimental) to include them in their social media strategies. Although big sales promotions change consumers' motivation to buy, bombing their followers with promotional content does not guarantee them higher engagement levels. In fact, it can have the opposite effect since over-promoting teases the effectiveness of the promotions and might lead brands to lose their credibility. For instance, premium brands like Apple or Luis Vuitton do not adopt sales promotion strategies because reducing their prices would become the products accessible to people out of their target. The adoption of those strategies can make them lose their loyal customers since they might lose their identification feeling with the brand.

For these reasons, it is essential that managers take a long-term perspective of marketing decisions and be aware that competitors can quickly adopt the same strategy (Aaker, 1991), which only ensure them a short-term advantage.

High and low equity brands should adopt different SMMS since low equity brands need higher efforts to make their content viral. However, this dissertation proved that over-promoting (both regarding the frequency and the reduction value) is not the best pathway to follow to achieve their goals.

Brand managers must adopt more regularly low promotional values and frequency posting times or adopt other content types that incite people to share, such as entertainment or motivational content. For instance, before defining their social media strategy content, they may consider Vries and his colleagues' studies (2012) that show people prefer and react more to lively and interactive content due to the positive feelings aroused by them. Moreover, considering the consumers' preferences, especially the hedonic aspects that attract their attention on social media, such as sounds, images, colors, text, and other characteristics, might be the success factor for higher performance levels.

Furthermore, brands can opt for promoting their posts as a way to increase their awareness, reducing the frequency posting time needed. Facebook tools offer this option through the payment of a rate that promotes the content created by brands, reaching more people and making it possible for brands to increase their performances.

Altogether, these conclusions indicate that SMMS must depend on the goals of brands. If the goal is to increase sales, promotional content might be the best strategy to approach since price reductions influence the consumers' choice process. Nevertheless, managers must be aware that even if the consumer perceives the promotion as worthy, it might not be sufficient to modify his or her behavior, leading brands to invest their resources in ineffective strategies (Alba et al., 1999). Contrary, if the goal is to improve the engagement and the performance of their websites, brands should explore other content types. Also, brands can improve their distribution channels by being present in different social media platforms, such as Twitter or Instagram.

The key for the success is to adapt their content to the SMN rules, which knowledge may be achieved through a netnography analysis. In other words, managers must allocate part of their marketing budget in studies for the understanding of consumers' interests and preferences and then define their strategies according to the findings.

5.3. Limitations and future research

First, the most relevant limitation of this study is the approach to measure the performance. It was not possible to obtain the reach rate of each post because that information comes directly from Facebook insights only available for the page owner. Therefore, this study based on the number of brands' fans on Facebook. Hence, further studies should take a different statistical approach to weight the performance, for instance, considering the number of people that saw the posts instead of the number of followers. This different approach would yield more accurate results since not all the followers of the brands on Facebook see their posts. Moreover, in paid media posts, many of the people that saw the posts do not even follow the page.

Second, even though the posts were randomly selected from the Facebook official pages, they did not distinguish paid media from earned media posts. Generally, companies choose paid media posts to generate higher engagement since their dynamic and reach numbers are more prominent than earned media. In that sense, future research should isolate paid and earned media to verify whether the same conclusions remain.

Third, considering brand equity is still a controversial topic in the research field, in this study, the classification of brands is according to their financial value. However, since many authors define brand equity from a consumer perspective, it would be interesting for further

research to perform the same study with high and low brands equity defined by the consumers' perspective. High equity brands from a consumer perspective, (e.g., Hugo Boss or Burberry), do not post promotional content on their Facebook pages. Would the results still hold similar to these findings, if these high equity brands from a consumer perspective decided to over-promote their products on social media?

Fourth, in this study, the classification of the market structure of high and low equity brands based on brands operating in the Portuguese market, but if the study considered international markets, the situation might differ. Thus, further research should expand to European countries and see whether the same conclusions are the same.

Fifth, this dissertation only includes four industry sectors: grocery, restoration, furniture, and electronic retail. Future research should study other industries and assess whether the results are consistent with these findings. For instance, it would be interesting to study the fashion retail, since brands competing in those markets frequently adopt promotions as SMMS.

Finally, regarding the UGC, future studies could benefit from a qualitative analysis of the comments, taking into account their valence. Also, analyzing other social networks like Instagram would be significant considering its popularity is ascending and brands are using it as a tool for promoting sales. Moreover, although a high percentage of the consumers on Instagram, for instance, are also on Facebook, their behaviors are not the same, leading to different engagement and performance levels. Thus, it would be interesting to study the differences between both social media websites and understand whether the same conclusions are applied.

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ANNEXES

Annex 1 – UGC collected from Facebook promotional posts of high equity brands

High equity brand	Post	Date	Nº of likes	Nº of shares	Nº of comments	Performance
			Promotional			
McDonald's	1	13/Sep	142	12	11	0.003
	2	06/Sep	2000	57	73	
	3	28/Aug	2100	534	222	
	4	08/May	666	33	74	
	5	03/Apr	1300	40	43	
	6	26/Mar	1200	27	24	
	7	23/Feb	2500	59	102	
	8	29/Jan	2900	266	558	
	9	26/Jan	1300	84	112	
	10	30/Oct	1800	49	124	
IKEA	11	19/Sep	2000	40	15	0.004
	12	02/Oct	656	2	10	
	13	28/Sep	565	12	12	
	14	10/Sep	1900	34	23	
	15	20/Sep	344	12	2	
	16	19/Sep	2000	40	15	
	17	14/Sep	146	10	1	
	18	16/Aug	1600	19	11	
	19	03/Aug	139	11	8	
	20	13/Jul	493	15	28	
Lidl	21	22/Sep	101	4	3	0.042
	22	10/Aug	2100	33	7	
	23	27/Jul	154	2	9	
	24	20/Jul	138	2	3	
	25	06/Jul	91	1	1	
	26	29/Jun	105	3	8	
	27	19/Jun	193	6	2	
	28	12/Jun	149	6	5	
	29	08/May	119	2	13	
	30	22/Jun	1000	17	8	

Annex 2 – UGC collected from Facebook promotional posts of low equity brands

Low equity brand	Post	Date	Nº of likes	Nº of shares	Nº of comments	Performance
			Promotional			
Continente	31	06/Oct	18	1	0	0.052
	32	17/Sep	32	6	2	
	33	15/Aug	81	1	0	
	34	15/Aug	423	18	30	
	35	07/Aug	4000	78	40	
	36	14/Jul	197	28	13	
	37	27/Jun	504	15	15	
	38	25/May	273	16	14	
	39	10/May	3500	157	100	
	40	04/May	50	1	3	
Pingo Doce	41	06/Jun	4300	111	43	0.904
	42	27/Jul	1200	39	77	
	43	20/Jul	3200	64	37	
	44	22/Jun	3700	92	52	
	45	12/Jun	1200	146	70	
	46	23/Mar	2900	322	203	
	47	07/Nov	445	24	6	
	48	30/Oct	3300	236	91	
	49	30/Sep	6000	421	184	
	50	01/Feb	1500	73	36	
FNAC	51	13/Oct	27	2	8	0.014
	52	12/Oct	16	0	3	
	53	12/Oct	8	0	1	
	54	10/Oct	176	20	25	
	55	09/Oct	20	0	1	
	56	09/Oct	137	18	9	
	57	28/Sep	30	4	3	
	58	27/Sep	99	4	8	
	59	14/Sep	132	10	4	
	60	07/Sep	55	2	4	

Annex 3 – Non-promotional posts performance of high equity brands

High equity brand	Post	Exposure	Engagement			Post perform.	Brand perform.
Non-promotional			Share rate	Talk rate	Love rate	Non-promotional	
McDonald's	61	78 692 913	0.00005	0.00024	0.00178	0.0021	0.003
	62		0.00019	0.00008	0.00152	0.0018	
	63		0.00021	0.00016	0.00098	0.0013	
	64		0.00072	0.00078	0.00254	0.0040	
	65		0.00019	0.00028	0.00096	0.0014	
	66		0.00007	0.00005	0.00118	0.0013	
	67		0.00008	0.00003	0.00178	0.0019	
	68		0.00013	0.00014	0.00055	0.0008	
	69		0.00010	0.00021	0.00178	0.0021	
	70		0.00119	0.00254	0.01055	0.0143	
IKEA	71	27 296 228	0.00001	0.00004	0.00078	0.0008	0.004
	72		0.00043	0.00007	0.00182	0.0023	
	73		0.00023	0.00020	0.00309	0.0035	
	74		0.00011	0.00003	0.00696	0.0071	
	75		0.00013	0.00007	0.00129	0.0015	
	76		0.00011	0.00007	0.00476	0.0049	
	77		0.00008	0.00001	0.00253	0.0026	
	78		0.00014	0.00004	0.00204	0.0022	
	79		0.00027	0.00036	0.00586	0.0065	
	80		0.00065	0.00015	0.01246	0.0133	
Lidl	81	1 066 113	0.00253	0.00019	0.00675	0.0095	0.042
	82		0.00225	0.00113	0.00657	0.0099	
	83		0.00507	0.00113	0.00825	0.0144	
	84		0.00591	0.00169	0.01248	0.0201	
	85		0.02533	0.01463	0.11256	0.1525	
	86		0.00675	0.00525	0.12194	0.1339	
	87		0.00169	0.00056	0.01613	0.0184	
	88		0.00563	0.00844	0.01998	0.0340	
	89		0.00225	0.00056	0.00807	0.0109	
	90		0.00281	0.00000	0.01782	0.0206	

Annex 4 – Non-promotional posts performance of low equity brands

Low equity brand	Post	Exposure	Engagement			Post perform.	Brand perform.
Non-promotional			Share rate	Talk rate	Love rate	Non-promotional	
Continente	91	2 003 023	0.00090	0.00549	0.00330	0.0097	0.046
	92		0.00030	0.00040	0.00180	0.0025	
	93		0.00449	0.00809	0.02167	0.0342	
	94		0.00374	0.00100	0.01852	0.0233	
	95		0.01992	0.00150	0.00824	0.0297	
	96		0.00225	0.00230	0.06490	0.0694	
	97		0.00045	0.00000	0.00125	0.0017	
	98		0.00779	0.01638	0.14977	0.1739	
	99		0.00315	0.00569	0.07489	0.0837	
	100		0.00644	0.00250	0.02511	0.0340	
Pingo Doce	101	375 177	0.11754	0.01546	0.66635	0.7994	0.947
	102		0.09196	0.01066	0.90624	1.0089	
	103		0.17192	0.03678	1.57259	1.7813	
	104		0.08316	0.02505	1.22609	1.3343	
	105		0.03518	0.00586	0.66635	0.7074	
	106		0.15033	0.01812	0.95955	1.1280	
	107		0.10795	0.03945	0.87958	1.0270	
	108		0.06637	0.00906	0.37316	0.4486	
	109		0.02559	0.00480	0.47977	0.5102	
	110		0.07197	0.01013	0.63970	0.7218	
FNAC	111	731 098	0.00492	0.00219	0.05225	0.0594	0.095
	112		0.00205	0.00219	0.00506	0.0093	
	113		0.00082	0.00137	0.05157	0.0538	
	114		0.01149	0.00274	0.03064	0.0449	
	115		0.00123	0.00027	0.02613	0.0276	
	116		0.02339	0.00547	0.03543	0.0643	
	117		0.02421	0.01669	0.23253	0.2734	
	118		0.03160	0.00465	0.03857	0.0748	
	119		0.02708	0.00957	0.08549	0.1221	
	120		0.07714	0.00520	0.13678	0.2191	

Annex 5 – Descriptive statistics of the dependent variable

Equity	Mean	Std. Deviation	Skewness	Kurtosis
Low	0,229	0,377	1,694	1,526
High	0,004	0,006	0,926	-0,226

Annex 6 – Factorial ANOVA results and effect sizes

Variables	F	Sig	η^2_p	d	Effect size
Equity	6.01	0.018	0.104	0.681	Intermediate
Frequency	6.04	0.017	0.104	0.681	Intermediate
Eq. x Frequency	5.30	0.025	0.093	0.640	Intermediate
Equity	4.61	0.036	0.081	0.594	Intermediate
Promotional discount	2.88	0.096	0.052	0.468	Small
Eq. x Prom. Discount	2.78	0.101	0.051	0.464	Small
Equity	10.48	0.002	0.168	0.899	Large
Promotional type	0.756	0.388	0.014	0.238	Small
Eq. x Prom. Type	0.952	0.334	0.018	0.271	Small

Annex 7 – Factorial ANCOVA results and effect sizes of frequency

Variables	F	Sig	η^2_p	d	Effect size
Market Structure	0.015	0.902	<0.001	0	No effect
Equity	5.902	0.0019	0.104	0.681	Intermediate
Frequency	3.977	0.051	0.072	0.557	Intermediate
Eq. x Frequency	5.149	0.028	0.092	0.637	Intermediate
Perishability	0.050	0.824	0.001	0.063	No effect
Equity	4.731	0.034	0.085	0.610	Intermediate
Frequency	3.444	0.069	0.063	0.519	Intermediate
Eq. x Frequency	5.027	0.029	0.090	0.629	Intermediate
Industry	<0.001	0.992	<0.001	0	No effect
Equity	3.696	0.060	0.068	0.540	Intermediate
Frequency	3.663	0.061	0.067	0.536	Intermediate
Eq. x Frequency	3.216	0.079	0.059	0.501	Intermediate

Annex 8 - Controlling the effect of the control variables on the frequency

Variable	η^2_p before controlling the market structure	η^2_p after controlling the market structure	Δ	*d*	New effect
Equity	0.104	0.104	0	0.681	Intermediate
Frequency	0.104	0.072	-0.032	0.557	Intermediate
Eq. x Freq.	0.093	0.092	-0.001	0.637	Intermediate
Variable	η^2_p before controlling the perishability	η^2_p after controlling the perishability	Δ	*d*	New effect
Equity	0.104	0.085	-0.019	0.610	Intermediate
Frequency	0.104	0.063	-0.041	0.519	Intermediate
Eq. x Freq.	0.093	0.090	-0.003	0.629	Intermediate
Variable	η^2_p before controlling the industry	η^2_p after controlling the industry	Δ	*d*	New effect
Equity	0.104	0.068	-0.036	0.540	Intermediate
Frequency	0.104	0.067	-0.037	0.536	Intermediate
Eq. x Freq.	0.093	0.059	-0.034	0.501	Intermediate

Annex 9 – Factorial ANCOVA results and effect sizes of promotional discount

Variables	F	Sig	η^2_p	d	Effect size
Market Structure	1.87	0.178	0.035	0.381	Small
Equity	3.52	0.067	0,064	0.523	Intermediate
Prom. Discount	3.34	0.074	0.061	0.510	Intermediate
Eq. x Prom. Disc.	2.48	0.122	0.046	0.439	Small
Perishability	4.81	0.033	0.086	0.614	Intermediate
Equity	5.43	0.024	0.096	0.652	Intermediate
Prom. Discount	3.52	0.066	0.065	0.527	Intermediate
Eq. x Prom. Disc.	2.74	0.104	0.051	0.464	Small
Industry	6.61	0.013	0.115	0.721	Large
Equity	8.73	0.050	0.146	0.827	Large
Prom. Discount	2.66	0.109	0.050	0.459	Small
Eq. x Prom. Disc.	3.40	0.071	0.062	0.514	Intermediate

Annex 10 – Controlling the effect of the control variables on promotional discount

Variable	η^2_p before controlling the market structure	η^2_p after controlling the market structure	Δ	*d*	New effect
Equity	0.081	0.064	-0.017	0.523	Intermediate
P. Discount	0.052	0.061	-0.009	0.510	Intermediate
Eq. x P. Disc.	0.051	0.046	-0.005	0.439	Small
Variable	η^2_p before controlling the perishability	η^2_p after controlling the perishability	Δ	*d*	New effect
Equity	0.081	0.096	0.015	0.652	Intermediate
P. Discount	0.052	0.065	0.013	0.527	Intermediate
Eq. x P. Disc.	0.051	0.051	0	0.464	Small
Variable	η^2_p before controlling the industry	η^2_p after controlling the industry	Δ	*d*	New effect
Equity	0.081	0.146	0.065	0.827	Large
P. Discount	0.052	0.050	-0.002	0.459	Small
Eq. x P. Disc.	0.051	0.062	0.011	0.514	Intermediate

Annex 11 – Factorial ANCOVA results and effect sizes of promotional type

Variables	F	Sig	η^2_p	d	Effect size
Market Structure	2.35	0.131	0.044	0.429	Small
Equity	9.61	0.003	0,159	0.870	Large
Prom. Type	2.05	0.158	0.039	0.403	Small
Eq. x Prom. Type	0.19	0.667	0.004	0.127	No effect
Perishability	5.53	0.023	0.098	0.659	Intermediate
Equity	13.79	0.001	0.213	1.041	Large
Prom. Type	2.64	0.110	0.049	0.454	Small
Eq. x Prom. Type	0.31	0.582	0.006	0.155	No effect
Industry	7.78	0.007	0.132	0.780	Intermediate
Equity	17.75	<0.001	0.258	1.179	Large
Prom. Type	0.95	0.333	0.018	0.271	Small
Eq. x Prom. Type	2.36	0.131	0.044	0.429	Small

Annex 12 – Controlling the effect of the control variables on the promotional

Variable	η^2_p before controlling the market structure	η^2_p after controlling the market structure	Δ	*d*	New effect
Equity	0.168	0.159	-0.009	0.870	Small
P. Type	0.014	0.039	0.025	0.403	Large
Eq. x P. Type	0.018	0.004	-0.014	0.127	No effect
Variable	η^2_p before controlling the perishability	η^2_p after controlling the perishability	Δ	*d*	New effect
Equity	0.168	0.213	0.045	1.045	Small
P. Type	0.014	0.049	0.035	0.454	Large
Eq. x P. Type	0.018	0.006	-0.012	0.155	No effect
Variable	η^2_p before controlling the industry	η^2_p after controlling the industry	Δ	*d*	New effect
Equity	0.168	0.258	0.009	1.179	Small
P. Type	0.014	0.018	0.004	0.271	Large
Eq. x P. Type	0.018	0.044	0.026	0.429	Small