

Shrinking Wallets, Shrinking Products

Exploring Shrinkflation's Impact on Consumer Intentions in Inflationary Times

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Abstract

Shrinkflation has become a prevalent tactic used by fast-moving consumer goods (FMCG) firms seeking to maintain profit margins amid rising costs, even more so in a post-Covid society that has been plagued by war and high inflation. *Shrinkflation*, also known as *product downsizing*, is a practice whereby a product's content is reduced without a corresponding decrease in the selling price. Even with the proliferation of shrinkflation and discussions surrounding it in the media, this phenomenon remains under-researched. Simultaneously, previous studies have emphasized the need for marketing research during inflationary times. This quantitative study, therefore, aimed to fill these gaps by investigating consumer reactions to shrinkflation during a time of high inflation. We specifically examined how shrinkflation impacts customers' product and brand behavioral intentions, effects relating to customers' awareness of shrinkflation, and whether different levels of shrinkflation led to differing results. Furthermore, we examined the mediating effects of offer fairness, brand trust, and brand credibility, as well as the moderating effects of brand type, the stated financial impact of inflation, and prior knowledge of shrinkflation. Using an experiment in an online survey with treatments featuring liquid laundry detergent products, we collected 383 valid responses from Sweden-based respondents, and we obtained results from analytical tests such as Independent *t*-Tests, planned contrasts using One-way ANOVAs, Two-way ANOVAs, and a variety of Process models from Hayes. The results from the study indicate that shrinkflation leads to worse product and brand behavioral intentions, and awareness of the shrinkflation leads to even more negative intentions. Interestingly, there was no empirical support for the notion that higher levels of shrinkflation lead to worse behavioral intentions, however, the results did show tendencies in line with this hypothesis. We also found that brand type has an impact on customers' behavioral intentions. Furthermore, there is some evidence that differences exist between customers who perceive greater financial impact from inflation and those who perceive themselves to be impacted to a lesser degree, with the higher impact group reacting more negatively to shrinkflation. Finally, the level of previous knowledge that a customer has about shrinkflation does not affect their behavioral intentions towards either the product or the brand. These novel insights contribute to the limited body of literature relating to shrinkflation, as well as specific calls for marketing research during inflationary times. These results also provide valuable guidance and considerations for firms who might be interested in using shrinkflation as a strategy to tackle rising costs and strained profit margins.

Key Terms: shrinkflation, product downsizing, inflation, consumer intentions, brand type, marketing

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1. Introduction

Global markets, as well as the Swedish market, are constantly exposed to disruptions that can have major effects on firms, industries, and households. The Covid-19 pandemic and Russia's invasion of Ukraine are two recent examples of such disruptions. Following the recent disruptive years, the inflation level, referring to the increase in prices and fall in purchasing power (Dekimpe and Van Heerde, 2023), is higher than it has been for decades, where many countries have experienced increasing price levels (Edge by Ascential, 2022). Many underlying causes such as commodity-driven cost pressures, supply-demand imbalances, expansive fiscal and monetary policies during the pandemic, and the war in Ukraine all played a role in increasing consumer price levels worldwide (Dekimpe and Van Heerde, 2023). In McKinsey & Company surveys (Bazzoni et al., 2022; Condon et al., 2022), it was revealed that rising price levels are the number one concern for 53% of European customers, and the rising inflation level is the number one concern for 43% of European executives. In Sweden alone, the inflation rate peaked at 8.5% in 2023, a significant increase from 2020 when it averaged .5% (SCB, 2024). Although the inflation rate is on its way down, it will take time before it reaches pre-pandemic levels (Larson and Zangana, 2024; Sveriges Riksbank, 2024a).

The inflationary pressure affecting global markets presents a setting of societal and managerial relevance, as it has not only upset consumers that now face a higher cost of living, but also created challenges for managers. As the input costs of goods increase, producers of fast-moving consumer goods (FMCG) can respond by considering price and package size, two key decision variables that allow manufacturers to pass on increased costs to consumers (Lee, 2022; Gourville and Koehler, 2004). In an ever-increasingly competitive business

landscape, firms are faced with the difficult task of maintaining margins while simultaneously keeping the brand attractive to consumers. Interestingly, research about how to conduct marketing in times of inflation is scarce (Dekimpe and Van Heerde, 2023). Since inflation is a worldwide issue, this presents an important gap in the current literature which we aim to fill.

Generally, firms either directly increase the prices of their products, or engage in *product downsizing*, also known as *shrinkflation*, which refers to the practice where package quantity is decreased without a comparable reduction in selling price, indirectly raising the unit price (Evangelidis, 2023; Wilkins, Beckenuyte, and Butt, 2016). Product downsizing is a common strategy among firms when they expect consumers to be more attentive or sensitive to price changes than to changes in package sizes. In Sweden, hundreds of goods have been subjected to shrinkflation in recent years as the Swedish krona has weakened (Carlström, 2022). While Kachersky (2011) found that consumer reactions are negative upon recognizing shrinkflation, Lee (2022) found no significant change in consumer demand in response to it. Although shrinkflation is a common practice among producers of FMCG, it has not been extensively researched (Lee, 2022; Dekimpe and Van Heerde, 2023; Kim 2024; Yonezawa and Richards, 2016). Additionally, the limited literature on shrinkflation has primarily researched it in a low-inflationary context (Dekimpe and Van Heerde, 2023), presenting a gap in the current literature that we aim to fill, as understanding customers' response to shrinkflation in inflationary times is important for firms and can help clarify implications of such a cost-driven choice of strategy.

Consumers' economic decisions are significantly influenced by their perceptions and expectations of inflation (Dekimpe and Van Heerde, 2023). Although consumers have some capacity to assess and predict inflation, their perceptions and expectations often exceed actual

inflation rates. This overestimation of inflation is fueled by their previous experiences with frequently purchased items (Pizzinelli, 2022), and significantly varies between households (D'Acunto, Malmendier, and Weber, 2023). Additionally, media coverage and word-of-mouth (WOM) communication often amplify consumers' expectations of inflation, thus affecting their perceptions (Ranyard et al., 2008). Considering inflation's impact on consumers' price sensitivity (D'Acunto, Malmendier, and Weber, 2023; Dekimpe and Van Heerde, 2023), consumers' perceptions of inflation impact are likely to add new contributions to the existing literature on consumers' response to shrinkflation.

Despite the widespread use of shrinkflation by producers of FMCG for many decades (Çakır and Balagtas, 2014; Gupta et al., 2006), consumers' awareness and knowledge of shrinkflation was lacking for a considerable period. This has changed in recent years, where FMCG firms often face public scrutiny when they product downsize (Yonezawa and Richards, 2016). In particular, social media and increasing news media attention present risks for firms who use this tactic (Yao, Oppewal and Wang, 2020). The potential risk of facing a backlash may contribute to the tendency for firms to refrain from advertising shrinkflation decisions (Meeker, 2021). Even still, a US survey from 2024 (YouGov) revealed that about 80% expressed concerns about shrinkflation, an increase from 2022 where about 60% expressed concerns, indicating that consumers' knowledge and interest in shrinkflation is increasing, adding to the relevancy for research about the topic.

Furthermore, a McKinsey & Company study (Charm et al., 2022) showed that consumers have changed their consumption patterns during the current inflation period by, among others, switching to private labels (PLs). While national brands (NBs) are owned and marketed by producers (Alić, Činjarević, and Agić, 2020), PLs are brands controlled by retailers and

distributed exclusively at their stores (Nenycz-Thiel and Romaniuk, 2014). Lamey et al. (2007) found that PL-share rises during economic downturns, primarily due to their lower prices, while declining when they recover. However, consumers tend to transition more extensively to PLs during economic downturns than they switch back to NBs during subsequent recoveries. This shift permanently elevates the share of PLs across business cycles, ultimately contributing to the intensified competition between NBs and PLs over time. Sweden is no exception, where the PL-share in the FMCG market reached 28.7% in 2023 (Statista). While NBs still enjoy greater recognition and popularity among consumers compared to PLs (Wang, Torelli, and Lalwani, 2020), the market penetration of PLs poses significant challenges for NBs (Nenycz-Thiel and Romaniuk, 2014). In the context of shrinkflation, it adds further nuance as literature looking at the differences in effects between PLs and NBs when firms use this tactic is scarce (Alić, Činjarević, and Agić, 2020; Dekimpe and Van Heerde, 2023; Yao, Oppewal, and Wang, 2020). Against this background, this thesis aims to answer the following questions:

1. Does shrinkflation affect consumer intentions during inflationary times?
2. Does the level of shrinkflation have different effects on consumer intentions during inflationary times?
3. Is there a difference in effects on consumer intentions (during inflationary times) between:
 - a. National brands and private labels when exposed to shrinkflation?
 - b. Perceived level of financial impact due to inflation when exposed to shrinkflation?
 - c. Level of prior knowledge about shrinkflation when exposed to it?

By answering these questions, this study aims to fill the research gap on shrinkflation, particularly in inflationary times, thus providing firms and marketers with relevant insights into what implications this tactic may have on consumer intentions. To answer these questions, a quantitative study has been conducted through a survey analyzing the effects on consumers' behavioral intentions resulting from shrinkflation. The research focuses on the FMCG industry, specifically liquid laundry detergents from NBs and PLs in the Swedish market.

This thesis proceeds as follows: the following section provides a literature review where we examine fundamental theories relating to shrinkflation, effects that can arise from this practice, the mediating effects of offer fairness, brand trust, and brand credibility, as well as the moderating effects of brand type, inflation impact, and shrinkflation knowledge, upon which we base our hypotheses and theoretical framework. After the literature review, a pre-study is discussed, after which the methodology and results of the main study are presented. The thesis proceeds with a discussion of the results, implications for firms and academia, as well as avenues for future research. Finally, we conclude with answers to our research questions and the limitations of our study.

2. Literature Review

2.1 Background

The current inflationary environment is taking its toll on consumers as well as businesses. For consumers, their purchasing power is reduced as a result of prices rising more than their nominal income, making it increasingly difficult to maintain the same standard of living (Evangelidis, 2023). For businesses, inflation affects their profit margins negatively as input-costs rise, creating a need to manage increased costs while balancing consumer satisfaction (Dekimpe and Van Heerde, 2023). In the ever-increasingly competitive landscape and inflationary setting, product managers must typically opt to either increase selling prices, reduce package sizes, or decrease product quality (Wilkins and Ireland, 2020; Yao, Oppewal, and Wang, 2020). From a consumer standpoint, these are all undesired actions; however, there are consumer trade-off preferences. Due to the need for manufacturers of FMCG to react to increased input or overhead costs, Wilkins and Ireland (2020) identified which of these alternatives consumers prefer. They found that quality is the most important product attribute among consumers. Product quantity was found to be the least important product attribute for two of the three products they examined, implying that manufacturers might have a higher likelihood of maximizing profit by reducing product quantity rather than lowering quality or increasing price.

FMCG firms have experimented with different tactics to cope with inflation. Two such tactics, however less frequently used, are skimpflation and greedflation (Dekimpe and Van Heerde, 2023). Both of these have the potential to negatively impact consumers' trust and put firms' brand equity, referring to the "incremental utility or value added to a product by its brand name" (Yoo, Donthu, and Lee, 2000, p. 195), at risk (Dekimpe and Van Heerde, 2023).

Skimpflation refers to when a firm decreases product quality while keeping prices the same, which means consumers are indirectly paying more for a lower level of product quality or service. As skimpflation is more prevalent when it comes to service quality (e.g., staff cuts leading to longer waiting times) rather than product quality (e.g., moving from natural coloring to artificial coloring), this tactic is not commonly used. Greedflation is when a firm raises prices more than its costs have increased to achieve excess profit margins. As it means deliberately profiting from and prolonging the inflation climate, it may not only seriously damage consumer trust and loyalty, leading to loss of customers and financial losses for the industry, but also potentially result in regulatory action. Because of this, greedflation is also not a commonly used tactic.

As decreasing quality is the least desired alternative for consumers (Wilkins and Ireland, 2020), firms generally respond to cost increases by examining price and package size, two key decision variables (Lee, 2022). The most common inflation-coping tactic is to increase prices, this way passing on increased costs to consumers (Gourville and Koehler, 2004; Wilkins and Ireland, 2020; Yao, Oppewal, and Wang, 2020; Lee, 2022). Generally, consumers are averse and sensitive to price increases. However, during inflationary times, price increases are sometimes unavoidable to retain profit margins (Yao, Oppewal, and Wang, 2020). When FMCG firms increase their prices, the demand tends to go down. As such, firms need to analyze each product's price elasticity of demand so that they can estimate the expected drop in demand as a result of a given price increase, especially since the disposable income for consumers to pay higher prices is lower in inflationary times (Yao, Oppewal, and Wang, 2020; Wilkins and Ireland, 2020).

2.2 Shrinkflation

Rather than passing on cost increases to consumers by raising sales prices, firms can also decide to decrease product quantity without a corresponding price increase, indirectly raising unit prices by shrinking the package size (Evangelidis, 2023; Wilkins, Beckenuyte, and Butt, 2016). This is commonly referred to as *product downsizing* or *shrinkflation*, and is a widely used tactic among FMCG firms (Kim, 2024; Çakır and Balagtas, 2014; Wilkins, Beckenuyte, and Butt, 2016; Wilkins and Ireland, 2020; Dekimpe and Van Heerde, 2023; Lee, 2022; Yao, Oppewal, and Wang, 2020). As shrinkflation usually involves either retaining the package size and appearance or changing the package to conceal the reduced quantity, it is often, from a consumer perspective, viewed as a less obvious inflation-coping tactic than that of a price increase (Gourville and Koehler, 2004; Wilkins, Beckenuyte, and Butt, 2016).

Although shrinkflation should mirror the effects of an equivalent price increase when it comes to consumer behavior, research has shown that a differential sensitivity between changes in price and quantity exists (Gourville and Koehler, 2004; Kim 2024, Evangelidis, 2023; Wilkins, Beckenuyte, and Butt, 2016). For instance, Çakır and Balagtas (2014) found that in situations where price increases may impact sales negatively, FMCG firms might prefer shrinkflation. They found that a product's demand elasticity following a change in package size is about one-fourth of that following a price change, implying that firms can profit from product downsizing as a hidden price increase to pass on increased costs to consumers. As such, marketing managers might have incentives to product downsize as it may better improve margins than an equivalent price increase. However, as highlighted by Çakır and Balagtas (2014), the demand elasticity might vary between product categories. For instance, Wilkins and Ireland (2020) found product quantity to be more important for

consumers than price in the cheapest category they researched, which was not the case for the more expensive categories.

Since consumers tend not to notice package size reductions at the time of purchase, shrinkflation is a popular response to cost increases among FMCG firms (Wilkins, Beckenuyte, and Butt, 2016). Despite firms' position that providing the legally required quantity indications on the products is sufficient for consumers to make informed and rational decisions, research has shown that consumers often do not examine these aspects (Gupta et al., 2006). As such, shrinkflation is likely to mislead consumers in the purchasing process. This has led to a phenomenon called "shrinkflation aversion", referring to consumers' perception of product downsizing as being more unfair than equivalent price increases, which is driven by their belief that shrinkflation is a deceptive practice (Evangelidis, 2023). Although "shrinkflation aversion" was found to be eliminated when product changes are transparent (Evangelidis, 2023), and consumers become less sensitive to product downsizing than equivalent price increases if fully informed (Kim, 2024), most companies still do not inform consumers when shrinkflation has occurred (Meeker, 2021). Since it is most often not communicated, consumers often fail to notice size changes (Wilkins and Ireland, 2020; Wilkins, Beckenuyte, and Butt, 2016), making it a controversial practice even if the alternative price increase would yield the same margin increase (Yao, Oppewal, and Wang, 2020; Dekimpe and Van Heerde, 2023).

As shrinkflation often goes unnoticed by consumers, it may generate an initial boost in profits. It may also damage a brand's reputation and consumer loyalty (Wilkins and Ireland, 2020; Dekimpe and Van Heerde, 2023). This sentiment is echoed by Kachersky (2011), who found that consumers react negatively if they recognize shrinkflation. Additionally, a Gartner

survey (2022) revealed that 62% of respondents said they would stop purchasing products from brands that downsize, and only 7% said they would carry on buying from firms that use this tactic. In contrast, Lee (2022) found no link between shrinkflation and lowered demand, indicating that demand is inelastic to changes in package size. Even still, purchase intention is a strong predictor of purchase behavior (Wilkins and Ireland, 2020). Wilkins, Beckenuyte, and Butt (2016) found that shrinkflation may cause cognitive dissonance, referring to the psychological discomfort a consumer might experience if perceiving inconsistency between expectations of a brand or product and disappointment from realizing shrinkflation has occurred, which was found to have negative effects on purchase intentions and was positively related with negative intended post-purchase behaviors, such as switching brands and speaking negatively about the product. Interestingly, Ferguson (2014) found that when the economy goes down, consumers' perceptions of real price unfairness due to shrinkflation are reduced, implying that consumers may be more forgiving towards this tactic during inflationary times than when the economy is stable. Nevertheless, considering consumers' general preference for price decreases and reluctance towards price increases (Yao, Oppewal, and Wang, 2020), it is reasonable to assume that they would be particularly averse to shrinkflation given its deceptive nature. This sentiment is especially likely in the current inflationary environment where consumers' purchasing power decreases, as both tactics mean increased spending for the same product, albeit sometimes necessary measures for manufacturers and retailers.

Research on the effects of shrinkflation on downstream behavior is limited (Friedman and Toubia, 2022). Wilkins, Beckenuyte, and Butt's (2016) findings are notable, as they suggest that shrinkflation affects various aspects of downstream behavior simultaneously and in similar ways. These reactions may arise from consumers' relationships with the brand, the

product, or both. However, these findings have yet to be tested in an inflationary context. Prior research, such as Menidjel et al. (2019), has consistently demonstrated the connections between purchase intentions, WOM intentions, and satisfaction for both product and brand, all of which are downstream effects. We aim to build upon this work by hypothesizing that shrinkflation will similarly affect these also in an inflationary setting. That is, if one aspect of downstream behavior (e.g., purchase intentions) is affected, we expect the other aspects (in this case WOM intentions and satisfaction) to follow suit. To reflect this in our study's dependent variables, we refer to these downstream effects as product and brand behavioral intentions throughout this thesis. The distinction between product and brand is made because the effects on behavioral intentions may differ between them, although they are likely to follow a similar pattern. Based on this premise, we propose the following hypothesis:

H1a: Customers exposed to shrinkflation during inflationary times will have less positive product and brand behavioral intentions than customers who are not exposed to shrinkflation.

2.3 Awareness of Shrinkflation

Considering how shrinkflation is often not communicated, consumers are unlikely to notice it (Wilkins, Beckenuyte, and Butt, 2016; Wilkins and Ireland, 2020). Çakır and Balagtas (2014) suggest that consumers are more responsive to changes in price compared to shrinkflation because of the cost differences in information acquisition. Oftentimes, consumers lean on their price expectations rather than closely examining actual prices, sometimes foregoing scrutiny of package sizes due to perceived costs associated with doing so. Kachersky (2011) echoes this sentiment, arguing that consumers do not consciously notice size decreases as

much as price increases. Thus, shrinkflation exploits consumer inattention as consumers are generally negligent to changes in package size (Meeker, 2021; Lee, 2022).

To spot shrinkflation, available sizes need to be processed by consumers. Ordabayeva and Chandon (2013) discovered that specific alterations in size can lead to consumers not noticing even a 24% reduction in package size. Since many consumers are using visual estimations of package volume (e.g., total package price or visual impressions of package size) or rely on previous experiences to evaluate product quantity and product value, they often fail to recognize size decreases as firms shrink their products in many different, and often subtle, ways (Çakır and Balagtas, 2014; Meeker, 2021; Wilkins, Beckenuyte, and Butt, 2016; Gupta et al., 2006). The salience of price information alone is therefore not sufficient enough to affect changes in quantity response to shrinkflation (Lee, 2022). Provided that consumers are inattentive to changes in package size as they neglect price information and overestimate their ability to visually estimate product volume (Meeker, 2021; Wilkins and Ireland, 2020; Gupta et al., 2006; Yonezawa and Richards, 2016), shrinkflation represents a hidden price increase which firms can leverage to pass through cost increases (Çakır and Balagtas, 2014). Because of this information asymmetry, shrinkflation has the potential to mislead consumers in the purchasing process (Gupta et al., 2006). Meeker (2021) found that upon uncovering shrinkflation, consumers might feel deceived and therefore react negatively toward the brand using this tactic. Kachersky (2011) supports this notion, where laboratory experiments showed that consumers exposed to downsized products exhibited decreased purchase intentions towards the brand being presented. He suggests that since shrinkflation is often implemented in a manner that consumers are unlikely to notice, they perceive a stronger persuasive intent. In the current inflationary setting where consumers' purchasing power decreases, we deem it likely that those aware of shrinkflation occurrence, realizing the

downsizing brand is indirectly charging more while giving less, will have lower intentions than those who remain unaware. On this basis, we propose the following hypothesis:

H1b: During inflationary times, customers who notice shrinkflation when exposed to it will have less positive product and brand behavioral intentions than customers who do not notice shrinkflation when exposed to it.

2.4 Levels of Shrinkflation

The saliency of shrinkflation is particularly low when the level of shrinkflation deployed is small relative to starting points (Evangelidis, 2023), implying that higher levels of shrinkflation are more likely to be noticed despite consumers' reputation of being notoriously bad at noticing changes in package size. As previously highlighted, consumer expectations significantly impact cognitive dissonance, potentially affecting brand and/or product perceptions and consumer behavior (Wilkins, Beckenuyte, and Butt, 2016). Not only does it seem probable that consumers will be more likely to notice shrinkflation if the level is higher, but also the likelihood of stronger perceived dissonance, resulting in stronger negative reactions. Moreover, as highlighted earlier, consumers' perceptions of pricing tactics such as shrinkflation are shaped by their interpretations of persuasive intent (Kachersky, 2011). When consumers view unit price increases as attempts at persuasion, they infer that firms are seeking to boost their profit margins. Since shrinkflation is frequently executed in a manner that consumers are less likely to detect, the perceived level of persuasive intent tends to be higher. Furthermore, consumers' perceptions of price fairness also influence their resistance to unit price increases (Dekimpe and Van Heerde, 2023). As prices rise over time, consumers tend to underestimate the impact of inflation and perceive the pricing as unfair, leading to suspicions of vendor price gouging. Thus, it seems likely that the higher the shrinkflation

level is, the higher the chances that customers confuse shrinkflation with greedflation, leading to stronger negative reactions. Therefore, higher levels of shrinkflation should raise consumers' perceptions of persuasive intent and price unfairness more than lower levels of shrinkflation. Based on this, we propose the following hypothesis:

H1c: During inflationary times, customers exposed to higher levels of shrinkflation will have less positive product and brand behavioral intentions than customers who are exposed to lower levels of shrinkflation.

2.5 Mediating Variables

Offer Fairness

Shrinkflation generally being unadvertised can lead to perceptions of unfairness among consumers (Wilkins and Ireland, 2020; Wilkins, Beckenuyte, and Butt, 2016; Yao, Oppewal, and Wang; Evangelidis, 2023). The current literature does not provide a clear understanding of whether perceived unfairness is linked to lowered purchase intentions as a result of shrinkflation (Friedman and Toubia, 2022). While previous research has shown that fairness perceptions do not always align with behavioral intentions (Urbany, Madden, and Dickson, 1989), the relationship between fairness perceptions and their potential impact on intentions due to shrinkflation during inflationary times presents a novel scenario that, to our knowledge, has not been studied before.

The aforementioned research by Wilkins, Beckenuyte, and Butt (2016) uncovered that shrinkflation may lead to cognitive dissonance, which occurs because shrinkflation results in consumer disappointment and feelings of being deceived upon discovery. Similarly, consumers perceive shrinkflation as more unfair than equivalent price increases because it

feels like a deceptive practice intended to mislead them (Evangelidis, 2023). Therefore, there appears to be a connection between perceived unfairness and cognitive dissonance, as both stem from feelings of deception. If this is the case, then perceptions of fairness resulting from shrinkflation should theoretically influence purchase intentions, similar to the negative impact cognitive dissonance has on purchase intentions. Thus, shrinkflation should not only affect fairness perceptions, capturing a crucial attitude toward a firm's actions, but also in turn influence product and brand behavioral intentions due to feelings of being deceived.

Brand Trust

Shrinkflation may seriously harm consumers' brand trust and the firm's brand equity (Dekimpe and Van Heerde, 2023). Although brand trust is not conceptually connected to brand equity explicitly, both have their basis in the relationship between the brand and consumers (Delgado-Ballester and Munuera-Alemán, 2005). While brand equity is the relational market-based asset that arises through the relationship between the consumer and the brand, brand trust evolves through positive experiences between them, and grows the more positive encounters the customer has with the brand. Brand trust is positively related to brand loyalty, which in turn is positively related to brand equity. Therefore, brand trust is arguably, at the very least, associated with brand equity without explicitly being part of it. Furthermore, brand equity is an important predictor of purchase intentions (Calvo-Porrá and Lang, 2015; Cobb-Wahlgren, Ruble, and Donthu, 1995; Keller 1993), which has in turn been found to be an important predictor of purchase behavior (Homburg, Hoyer, and Koschate, 2005; Wilkins and Ireland, 2020). Thus, if brand equity is harmed, purchase intentions are likely to drop with purchase behavior likely to follow suit. Given the assumption that brand trust is connected to brand equity, the relationship between brand trust and purchase intentions is likely to follow a similar pattern.

Similar to how price increases may lower brand trust (Yao, Oppewal, and Wang, 2020; Grewal, Hardesty, and Iyer, 2004), consumer perceptions of shrinkflation are unfavorable, as firms are indirectly charging more while giving less in a deceptive manner (Gupta et al., 2006; Wilkins and Ireland, 2020; Wilkins, Beckenuyte, and Butt, 2016). As mentioned previously, 62% said they would stop purchasing products from brands who practice shrinkflation (Gartner, 2022), implying that most feel it violates trust which, if noticed, will lower their purchase intentions. As consumers seem to have certain expectations of the brands they purchase from, lowered brand trust seems to be linked to feelings of cognitive dissonance when exposed to shrinkflation as proposed by Wilkins, Beckenuyte, and Butt (2016). That is, consumers have expectations of not being deceived by brands they trust, if firms then product downsize this trust will be damaged, thereby creating cognitive dissonance as the expectations will not be met. If this is the case, the link between brand trust and purchase intentions is further strengthened, as cognitive dissonance is, similar to negatively impacted brand equity, linked to lowered purchase intentions as well as positively linked to negative intended post-purchase behaviors. Although research has established the direct link between brand trust and purchase intentions (see for instance Dam, 2022), we found no literature establishing this relationship in a Western setting nor in the context of shrinkflation. Therefore, we do not assume this relationship although it is highly indicative. Nonetheless, we expect shrinkflation to lower brand trust, ultimately lowering customers' product and brand behavioral intentions.

Brand Credibility

Brand credibility, unlike brand trust, constitutes an explicit component of brand equity (Keller, 2001; Keller, 2016). Broadly defined, it refers to the believability of a firm's intentions at a given point in time and comprises two subdimensions: trustworthiness and expertise (Erdem and Swait, 2004). Trustworthiness pertains to consumers' perceptions of a

firm's willingness to fulfill its promises, while expertise relates to the perceived ability of the firm to deliver on those promises. Brand credibility necessitates that firms possess both the capability (i.e., expertise) and willingness (i.e., trustworthiness) to consistently fulfill their commitments. Failure to do so can lead to eroded brand equity. As highlighted earlier, brand equity serves as a significant predictor of purchase intentions (Calvo-Porrall and Lang, 2015; Cobb-Wahlgren, Ruble, and Donthu, 1995; Keller 1993). Therefore, brand credibility is intrinsically linked to purchase intentions, given its integral role in brand equity.

However, the question arises whether shrinkflation negatively affects brand credibility. Although shrinkflation can evoke consumer disappointment and feelings of deception if noticed, it is important to distinguish deception from lying, as it may not necessarily involve false statements (Wilkins, Beckenuyte, and Butt, 2016). Consequently, firms employing this tactic may not explicitly lie to their customers, suggesting that brand credibility should not be detrimentally impacted since no explicit promises are broken. Indeed, firms are legally obligated to provide quantity indication on their packages for consumers to make informed decisions. However, consumers tend to view shrinkflation as a breach of trust when detected (Gupta et al., 2006), potentially leading to significant backlash (Yao, Oppewal, and Wang, 2020). This suggests that consumers may perceive firms using this tactic as violating an implicit promise, given its deceptive nature, even though no explicit promises have been broken. Therefore, as consumers seem to expect an implicit commitment from firms not to deceive them, it is plausible that shrinkflation adversely affects brand credibility, ultimately lowering behavioral intentions.

Based on the above, we expect shrinkflation to have negative effects on consumers' offer fairness, brand trust, and brand credibility, ultimately affecting behavioral intentions:

H2: During inflationary times, shrinkflation negatively affects customers' perceived offer fairness, brand trust, and brand credibility, in turn, leading to less positive product and brand behavioral intentions.

2.6 Moderating Variables

Brand Type

In inflationary periods, when consumers' disposable income diminishes, consumption patterns change, such as a shift from NBs to PLs (Dekimpe and Van Heerde, 2023; Charm et al., 2022). NBs are owned and marketed by producers (Alić, Činjarević, and Agić, 2020), whereas PLs are brands controlled by retailers and distributed exclusively at their stores (Nenycz-Thiel & Romaniuk, 2014). Generally, PLs are often seen as substitutes for NBs and struggle to achieve the same level of market success and consumer acceptance (Wang, Torelli, and Lalwani, 2020). While certain retailers provide PLs of comparable or even superior quality to NBs (Akcura, Sinapuelas, and Wang, 2019), PLs have historically faced challenges in terms of perceived quality and consumer awareness (Liu et al., 2018). Perceived quality encompasses consumers' assessment of a product's overall excellence or superiority, and they rely on various criteria to evaluate it, including brand reputation, past experiences, design, and the composition of ingredients (Wilkins and Ireland, 2020). However, this perception is changing as consumers increasingly view PLs more positively, recognizing their improved quality and value for money (Wang, Torelli, and Lalwani, 2020). Lamey et al. (2007) discovered that the market share of PLs tends to increase during economic downturns and decrease during recoveries. However, consumers are more likely to transition extensively to PLs during economic downturns than to switch back to NBs during subsequent recoveries. This shift leads to a permanent elevation in the share of PLs across business cycles,

contributing to the intensified competition between NBs and PLs over time. As we know that consumer perceptions of PLs are constantly improving (Wang, Torelli, and Lalwani, 2020), it may be that when economic downturns occur, consumers find that PLs meet their expectations at a lower price compared to NBs, mitigating the willingness to pay a premium for NBs once the economy recovers. Nonetheless, while NBs still enjoy greater recognition and popularity among consumers compared to PLs (Wang, Torelli, and Lalwani, 2020), the market penetration of PLs worldwide is substantial (Nenycz-Thiel and Romaniuk, 2014). In Sweden alone, the PL-share in the FMCG market was 28.7% in 2023 (Statista).

The increasing sales of PLs present challenges for NBs worldwide, raising a crucial question: will consumers continue to be willing to pay a price premium for NBs compared to PLs? Steenkamp, Van Heerde, and Geyskens (2010) found that consumers' willingness to pay a premium for NBs diminishes as PLs mature within a specific market. Their research revealed that marketing strategies, such as distinctive packaging and advertising, have a more pronounced effect on improving quality perception gaps in countries with a relatively new history of PLs compared to those with a longer-established presence of PLs. They argue that in more mature PL markets, such as the Swedish, the path to success involves, besides marketing, a return to fundamental manufacturing principles. Therefore, continuous quality improvements and advertising are essential for NBs to uphold consumers' perceptions of brand superiority and product differentiation from PLs (Steenkamp, Van Heerde, and Geyskens, 2010; Lamey et al., 2007). On the other hand, PLs engage in a catch-up strategy, attempting to replicate the innovations introduced by NBs (Steenkamp, Van Heerde, and Geyskens, 2010). However, in certain product categories, this catch-up game proves challenging for PLs, as NBs actively compete through ongoing and substantial investments in technical advancements. This places PLs at a disadvantage, resulting in comparatively lower

quality in these categories. Conversely, if NBs fail to innovate, they risk losing their typical quality advantage, as it allows PLs to narrow the gap. This notion remains relevant today. In a recent interview with the R&D Director of a multinational FMCG company (2024), it was revealed that they prioritize continuous innovation across all product categories. Despite a comparable baseline level between NBs and PLs, the company invests heavily in product development to maintain their quality edge.

Moreover, besides product innovation, distinctive packaging also plays a crucial role in shaping consumers' perceptions of NBs and PLs (Steenkamp, Van Heerde, and Geyskens, 2010). When NBs' packaging stands out from PLs, consumers are more likely to discriminate between the stimuli, heightening their perception of quality gaps between the two. Consequently, NBs strive to differentiate the look and feel of their products as much as possible from PLs. Conversely, PLs often attempt to mimic NBs' packaging, mirroring the catch-up strategy observed in product innovations. While PLs are making strides to narrow the gap with NBs, they typically cannot match the advertising intensity of NBs (Steenkamp, Van Heerde, and Geyskens, 2010). This notion was endorsed by a Brand Manager of a multinational FMCG company (2024), who said they invest heavily in advertising, highlighting the importance of it to remain competitive. Given that NBs often have a larger presence and investment in their product categories compared to PLs, who as retailers need to manage and support far more categories, consumers are more likely to perceive a quality gap between NBs and PLs in categories where NBs are heavily advertised. Thus, advertising not only signals to consumers the marketer's confidence in the product quality but also reinforces the notion that high quality justifies a price premium.

Furthermore, brand image has been found to have a positive effect on brand commitment and brand loyalty, both for NBs and PLs (Alić, Činjurević, and Agić, 2020). However, this effect is stronger for NBs than for PLs due to their advertising capacity and wider distribution. Therefore, it comes as no surprise that advertised NBs enjoy a higher degree of knowledge among their non-users than do PLs (Nenycz-Thiel and Romaniuk, 2014), again emphasizing the importance of advertising for NBs to maintain their position. Moreover, considering the influential role of advertising in shaping brand associations in consumers' minds and consequently enhancing brand recall and recognition (Nenycz-Thiel and Romaniuk, 2014), it is unsurprising that brand equity plays a critical role in consumer evaluation and intentions (Reinders and Bartels, 2017), seeing how brand knowledge lies at the heart of brand equity (Keller, 2000; Keller, 2016). This sentiment is echoed by Calvo-Porrá and Lang (2015) who found brand equity dimensions (e.g., awareness, perceived quality, and loyalty) to be positively related to consumer purchase intentions. Furthermore, since consumers are constrained by bounded rationality when purchasing goods, and often rely on previous experiences and trust in brands due to time and cognitive constraints (Gupta et al., 2006), NBs' comparatively higher brand equity might help explain why they have remained market leaders despite PLs' lower prices and often comparable product quality.

However, as consumers tend to shift to PLs during inflation periods due to lower prices (Lamey et al., 2007), the amount of PL non-users diminishes which ultimately hurts NBs' advantage (Nenycz-Thiel and Romaniuk, 2014). Thus, consumers' increasing price consciousness during economic downturns contributes to PLs' success. This implies that consumers might trade off perceived quality for price during inflationary periods. Although research suggests that high-quality brands, traditionally NBs, are less sensitive to the negative effects of price increases (Yao, Oppewal and Wang, 2020; Sivakumar and Raj, 1997),

literature examining the differences in effects between PLs and NBs when firms opt for shrinkflation is scarce (Alić, Činjurević, and Agić, 2020; Dekimpe and Van Heerde, 2023; Yao, Oppewal, and Wang, 2020). Since shrinkflation is perceived as a more deceptive tactic than price increases, it tends to provoke stronger negative reactions from consumers (Wilkins and Ireland, 2020; Wilkins, Beckenuyte, and Butt, 2016). As NBs typically possess higher brand equity than PLs, and consumers often have stronger associations and relationships with these brands (Keller, 2000; Keller, 2016), consumers are likely to hold higher expectations for NBs compared to PLs. Therefore, consumers' perceptions of deception and cognitive dissonance when evaluating downsized products from an NB are likely to be stronger than equivalent shrinkflation from a PL. In other words, since PLs are considerably cheaper and have lower brand equity than NBs, consumers' perceptions of deception and cognitive dissonance are likely lower when shrinkflation occurs as they expect less from these brands. Additionally, as PLs remain cheaper than NBs during inflationary periods when consumers' price sensitivity increases, the negative effects on offer fairness, brand trust, and brand credibility should be less on PLs that product downsize than on NBs. Based on this, we propose the following hypothesis:

H3: The negative effects of shrinkflation on customers' product and brand behavioral intentions will be less pronounced for PLs than NBs during inflation times.

Inflation Impact

In recent years, inflationary pressure in many parts of the world has exceeded those of the financial crises of the early 90s and 2008. In Sweden, the inflation rate soared to 8.5% in 2023, marking a significant surge from 2020 when it averaged .5% (SCB, 2024). This price escalation has heavily impacted consumers, institutions, and firms alike. According to McKinsey & Company surveys, rising prices have emerged as the top concern for 53% of

European consumers, while the increasing inflation rate has become the primary worry for 43% of European executives (Bazzoni et al., 2022; Condon et al., 2022). Although inflation is a topic that affects us all, marketing research in inflationary times is limited (Dekimpe and Van Heerde, 2023). Consequently, while the present inflationary period poses a distinctive and demanding landscape for retailers and firms, the scarcity of literature addressing this context implies that insights derived from prior marketing research may not be directly applicable.

Research by Dekimpe and Van Heerde (2023) highlights that consumers' economic decisions are significantly influenced by their perceptions and expectations of inflation. Despite consumers possessing some capacity to assess and predict inflation, their perceptions and expectations often surpass actual inflation rates, exhibiting greater persistence over time. Consumers' tendency to overestimate inflation is often fueled by their direct experiences with regularly purchased goods, such as common grocery items (Pizzinelli, 2022; Sveriges Riksbank, 2024b). Additionally, media coverage and WOM communication amplify consumers' inflation expectations, subsequently shaping their perceptions (Ranyard et al., 2008). Moreover, significant variation exists in households' inflation expectations, stemming from past encounters with inflation, disparities in shopping baskets, cognitive abilities, and demographic characteristics (D'Acunto, Malmendier, and Weber, 2023). This implies that those who feel heavily impacted by inflation are likely to believe it will get worse.

Inflation has an impact on consumers' price sensitivity, with price increases having a more pronounced effect on inflation expectations compared to price decreases (D'Acunto, Malmendier, and Weber, 2023; Dekimpe and Van Heerde, 2023). While higher inflation may result in lowered consumer price knowledge, rendering consumers more susceptible to

accepting higher prices, it appears that, given the particularly high inflation rates and extensive media coverage, consumers are increasingly aware of and sensitive to price changes, whether it be direct or indirect. Considering consumers' general distaste for shrinkflation, it is likely that those customers who feel more financially impacted by inflation will have even stronger reactions to shrinkflation than those who feel less financially impacted by inflation, given that the downsizing brand is indirectly charging more by giving less during a time when customers already fear their financial situation becoming worse. Thus, we propose the following hypothesis:

H4: During inflationary times, the negative effects of shrinkflation on customers' product and brand behavioral intentions will be less (more) pronounced for customers who feel less (more) financially impacted by inflation.

Shrinkflation Knowledge

Shrinkflation has long been a commonly employed strategy by FMCG companies, as evidenced by Çakır and Balagtas (2014), who analyzed shrinkflation occurrences spanning from 1998 to 2007, and Gupta et al. (2006), whose work references shrinkflation occurrences dating back to the early 1990s. Despite its widespread use, not only has the literature on this phenomenon remained limited, (Lee, 2022; Dekimpe and Van Heerde, 2023; Kim, 2024; Yonezawa and Richards, 2016), but also consumers' awareness and knowledge of shrinkflation. This began to change as the internet reached the masses; it empowered consumers to notice and share product changes (Kachersky, 2011). As consumer knowledge about shrinkflation increases, FMCG firms often face public scrutiny when shrinkflation occurs (Yonezawa and Richards, 2016). Social media and increasing news media attention in particular have created risks for firms who downsize their products (Yao, Oppewal, and Wang, 2020). While the influence of media in shaping consumer attitudes and intentions

toward shrinkflation has received limited attention in research (Dekimpe and Van Heerde, 2023), we do know consumers are becoming increasingly aware of it. For instance, US surveys indicate a 20% increase in shrinkflation concerns from 2022 to 2024 (Evangelidis, 2023; YouGov, 2024).

Furthermore, although most consumers do not notice shrinkflation, there might be considerable backlash if they do (Yao, Oppewal, and Wang, 2020). For example, the Swiss company, Toblerone, faced consumer backlash when they downsized their chocolate bars by 25% in 2014, and they ultimately reverted to the original product size two years later (Lee, 2022). Another example is the Swedish company, Arla, which is currently facing backlash after their butter brand, Bregott, downsized their products by 17% (Clason, 2024). The potential risk of facing such backlash may contribute to the tendency for firms to refrain from advertising their downsizing decisions (Meeker, 2021). In Sweden alone, hundreds of goods have been subjected to shrinkflation in recent years as the Swedish krona has weakened (Carlström, 2022) of which few have received similar media backlash to that of Arla. Still, the media interest in shrinkflation shows no signs of slowing down (Evangelidis, 2023). For instance, today there are large communities on Reddit that document cases of shrinkflation. Even large institutions have started to show interest in the topic. For example, in 2023 the French government submitted a draft decree to the European Commission intending to force French food retailers to signal shrinkflation occurrence (Rajbhandari and Adghirni, 2023). Shrinkflation was also a topic for discussion for the European Parliament in 2022 (Evangelidis, 2023). This points toward a continuing positive trajectory for consumers' knowledge and interest in shrinkflation in the future. Much like how WOM and media attention can heighten consumers' inflation expectations (Ranyard et al., 2008), they are also likely to amplify consumers' negative perceptions of shrinkflation, as indicated by the

aforementioned US surveys from 2022 and 2024. Therefore, it appears probable that the more informed consumers are about shrinkflation, the more likely they are not only to detect shrinkflation but also to discern its underlying intent (i.e., to deceive by exploiting consumer inattention), ultimately resulting in stronger negative effects on behavioral intentions. Thus, we propose the following hypothesis:

H5: During inflationary times, the negative effects of shrinkflation on customers' product and brand behavioral intentions will be less (more) pronounced for customers who have less (more) existing knowledge about shrinkflation.

2.7 Theoretical Model

Based on the literature review we present our theoretical model in Figure 1, highlighting the variables to be used and the hypothesized relationships between these:

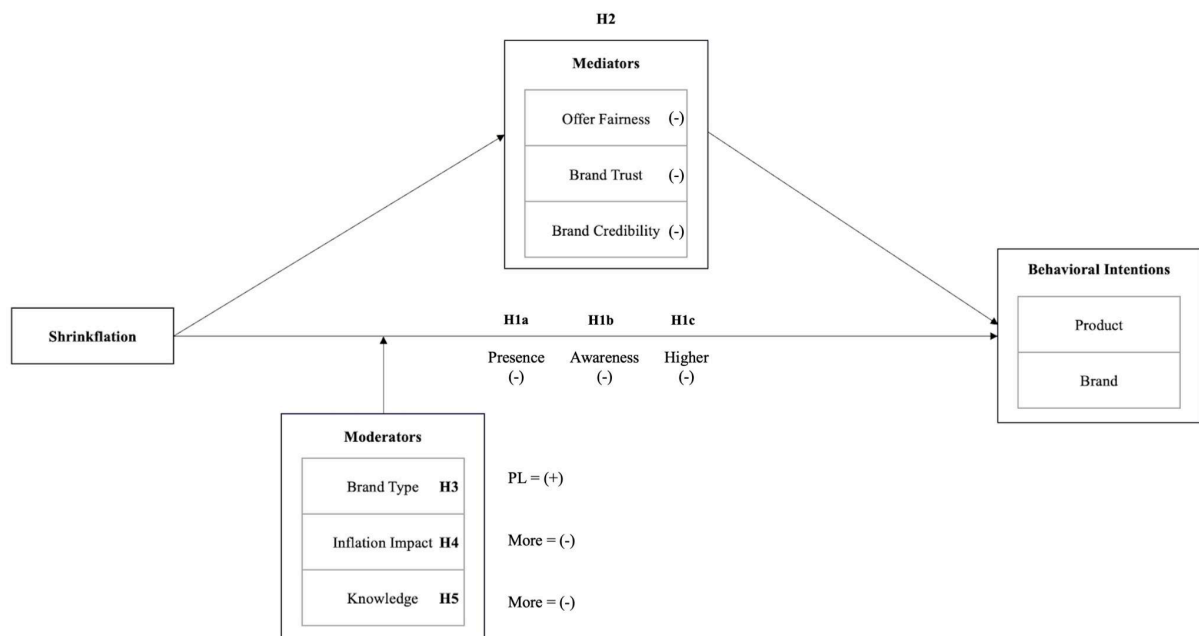


Figure 1. Theoretical Model

3. Research Studies

3.1 Pre-study

As our research, in part, aims to examine the differences in intentions (relating to brands and products) for NBs and PLs, the purpose of the pre-study was to determine which brands are most easily recognized by Swedish consumers as NBs or PLs and should be used as representatives in the main study. The following sections will outline the methodology used and results obtained from the pre-study.

Methodology

While FMCGs encompass a wide range of products, this thesis focuses specifically on laundry detergents. This category was chosen for several reasons. First, we were able to connect with a leading FMCG company that has in-depth knowledge and insights into the laundry category, meaning that the research could be conducted with a mind for practical applicability. Second, detergents have a high degree of penetration and are bought by nearly all households (NielsenIQ, 2024a; CMI Manager, 2024), so consumers are likely to have a high degree of general awareness and exposure to brands within this category. Finally, NB and PL detergents are widely available in Sweden, unlike other items such as personal care products or packaged foods. This research examines liquid laundry detergent specifically because this is the most frequent format bought in Sweden (NielsenIQ, 2024b). Table 1 provides figures for laundry detergent sales by format in Sweden for 2023.

Table 1. Laundry Detergent Sales by Format

Format Type	Sales Units	Sales Value in SEK
<i>Capsules</i>	854,913	57,245,668
<i>Powder</i>	10,330,422	419,888,528
<i>Liquid</i>	13,183,466	561,029,961
<i>Total</i>	24,369,131	1,038,200,653

Source: NielsenIQ. Sweden laundry detergent sales by format, 2023.

After interviews with our Nordic FMCG contacts and an examination of current NielsenIQ data from Sweden (NielsenIQ, 2024c), the brands used in the pre-study were chosen based on highest sales and distinguishability. A total of 10 brands were used, and the NBs selected were A+, Via, Neutral, Grumme, and Dreft, while the PL brands included Änglamark, Coop, ICA Basic, ICA Skona, and Fixa. (See Table 2 in Appendix A for sales and manufacturer information for the brands.)

A survey was created using Qualtrics to gauge which brands were most often correctly identified as NBs and PLs. The survey was distributed amongst the authors' personal networks on February 19th, 2024, and remained active for one week.

Respondents were provided simplified definitions of NBs and PLs lest they were not familiar with the concepts, after which they were presented with 10 different pictures of detergents featuring each of the chosen brands in a randomized order. The pictures featured real products currently on the market, and they were obtained from retail web pages (See Appendix B for pictures used in the pre-study). After each picture was presented, respondents were asked to indicate whether the brand was an NB or a PL. Several demographic questions were also included in the survey to capture the age and gender of the respondents. Finally,

three control questions were included in the survey to secure the quality of the data and that only Swedish residents were included in the analysis (See Appendix C).

After excluding responses from participants who failed the control questions, 32 valid responses remained. The gender split of the data sample included 59.4% male (N = 19) and 40.6% female respondents (N = 13). The age range of participants was 23 – 70 years old, with an average age of 31.1 years. As the pre-study aimed to simply examine which brands are most often correctly identified as NBs and PLs, significance and advanced analyses were not utilized.

Results

Results from the pre-study indicate that the NBs that are most easily identifiable are Via and A+ with respondents identifying them correctly 100% (N = 32) and 96.9% (N = 31) of the time, respectively. The PL brands that were most easily identifiable were Coop and ICA Basic with both having 90.6% (N = 29) of respondents able to correctly identify them. These brands were, therefore, selected for use in the treatments of the main study. Table 3 provides a summary of the results.

Table 3. Pre-Study Survey Results

Brand Type	Brand	Correctly Identified in % and N
<i>NB</i>	Via*	100%, N = 32
<i>NB</i>	A+*	96.9%, N = 31
<i>NB</i>	Neutral	84.4%, N = 27
<i>NB</i>	Grumme	81.3%, N = 26
<i>NB</i>	Dreft	71.9%, N = 23
<i>PL</i>	Coop*	90.6%, N = 29
<i>PL</i>	ICA Basic*	90.6%, N = 29
<i>PL</i>	ICA Skona	81.3%, N = 26
<i>PL</i>	Änglamark	75.0%, N = 24
<i>PL</i>	Fixa	65.6%, N = 21

* *Used in main study*

3.2 Main Study

The purpose of the main study was to understand the effects of shrinkflation on consumers' product and brand behavioral intentions, whether the amount of shrinkflation plays a role, and whether perceived offer fairness, brand trust, and brand credibility mediated the effects of shrinkflation. We also aimed to learn if the shrinkflation effects would differ depending on brand type, consumers' reported inflation impact, and level of knowledge about shrinkflation. The study was conducted using a quantitative approach utilizing an experiment in an online survey. This approach was deemed to be most suitable for several reasons. For instance, experiments are a common practice for capturing intentions as they allow a large amount of data to be collected from many respondents relatively quickly. Furthermore, experiments allow the testing of causal claims which are a large focus of this research, and the results are interesting to both academics and marketing practitioners (Söderlund, 2018).

The online survey was created using Qualtrics, and it was distributed between March 6th-16th 2024. Several aspects of consumers' behavioral intentions were measured, namely; brand purchase intentions, brand WOM intentions, brand satisfaction, product purchase intentions, product WOM intentions, and offer satisfaction. Furthermore, the study also examined awareness of shrinkflation in the treatments, potential mediators (offer fairness, brand trust, and brand credibility), and potential moderators (brand type, inflation impact, and shrinkflation knowledge). The study employed a series of 2X2 designs: shrinkflation presence (no shrinkflation vs. shrinkflation) vs. brand type (NB vs. PL), shrinkflation presence vs. inflation impact (lower vs. higher), shrinkflation presence vs. shrinkflation knowledge (lower vs. higher). The following section details the methodology employed in the study.

4. Methodology

4.1 Participants

300 Swedish residents were recruited to participate in the study using the platform, Prolific, and they were each paid approximately 1£ (13 SEK) for their time. Several controls were enabled through the platform to ensure that respondents were living in Sweden, fluent in English, and had a high approval rating for previous surveys they participated in. The survey was also distributed amongst the authors' personal contact lists and Facebook groups. Several control questions and attention checks were included throughout the survey to ensure high-quality data and that only Swedish respondents were included. The final sample included 383 valid responses.

The remaining sample comprised an age range of 18-88 and an average age of 32.2 years (SD = 11.5). 53.5% of the sample were men (N = 205), 45.2% were women (N = 173), and 1.3% identified as non-binary (N = 5). Respondents who expressed they were less financially impacted by inflation comprised 24% (N = 92) of the sample, those impacted to a higher degree were 71.8% of the sample, and those answering at the mid-point were 4.2% (N = 16). Finally, respondents with a lower level of shrinkflation knowledge were 50.7% (N = 194) of the sample, and those who were more knowledgeable were 49.3% (N = 189) of the sample. Table 4 provides a comparison of demographics of our main groups.

Table 4. Demographic Comparison of Samples

	No Shrinkflation N = 94	10% Shrinkflation N = 90	15% Shrinkflation N = 95	20% Shrinkflation N = 104	NBs N = 194	PLs N = 189
<i>Age Range</i>	18 - 76	18 - 75	18 - 88	18 - 86	18 - 86	18 - 88
<i>Age Mean</i>	M = 33.1	M = 32.7	M = 30.9	M = 32.1	M = 31.6	M = 32.9
<i>Males</i>	62.8%	48.9%	55.8%	47.1%	55.7%	51.3%
<i>Female</i>	36.2%	51.1%	44.2%	49.0%	43.3%	47.1%
<i>Non-Binary</i>	1.1%	-	-	3.8%	1.0%	1.6%

4.2 The Treatments

The results from the pre-study provided the basis for the treatments within the main study. Our focal brands, therefore, were Via and A+ for the NBs, and Coop and ICA Basic for the PLs. While the individual brands are not of particular interest to this study, but rather the brand type, we chose to include multiple brands that could be combined later on in NB and PL groupings to ensure that we were obtaining effects on a more general level, rather than for a specific brand. Because we were interested in seeing if different shrinkflation levels led to differences in brand and product behavioral intentions, the treatments also featured different amounts of shrinkflation at 0%, 10%, 15%, and 20%. These levels were selected because they fall within a typical range of package size changes that occur in real situations, and a control group was included for comparison (Yao, Oppewal, and Wang, 2020).

In total, the survey featured 16 different treatments, and individual respondents were randomly exposed to a single treatment. The brands and shrinkflation levels were combined in the following ways: $Via_{No\ Shrinkflation}$, $Via_{10\%\ Shrinkflation}$, $Via_{15\%\ Shrinkflation}$, $Via_{20\%\ Shrinkflation}$, $A+_{No\ Shrinkflation}$, $A+_{10\%\ Shrinkflation}$, $A+_{15\%\ Shrinkflation}$, $A+_{20\%\ Shrinkflation}$, $Coop_{No\ Shrinkflation}$, $Coop_{10\%\ Shrinkflation}$, $Coop_{15\%\ Shrinkflation}$, and $Coop_{20\%\ Shrinkflation}$.

*Coop*_{20% Shrinkflation}

*ICA Basic*_{No Shrinkflation}

*ICA Basic*_{10% Shrinkflation}

*ICA Basic*_{15% Shrinkflation}, and *ICA Basic*_{20% Shrinkflation}

For each treatment, participants were provided with an identical scenario at the beginning of the survey:

“Imagine you are on the way home and plan to stop by the grocery store to buy some things for dinner with friends later. Your friend calls you and asks if you could also buy them some laundry detergent while you are there. They send you information about which brand and size they need and say they will pay you back later tonight when you see each other. You agree and see the detergent they have asked for.”

Directly after this scenario, respondents were randomly allocated a control picture of a laundry detergent from one of the four brands on a shelf. The same pictures used in the pre-study were used in this survey, but the sizes of the detergent options were altered to be identical on the packages at one liter to reduce variability between the treatments. The 1-liter size was chosen to provide an easily digestible starting size, and the best-selling detergents for the chosen brands were all near this volume (NielsenIQ, 2024d). Other aspects of the laundry detergent remained unchanged, meaning product claims, marketing text, and logos remained intact. This felt necessary, as these features typically differ between NBs and PLs, and changing them could create undue influence on the participants. Alongside the detergent, a label was displayed with information pertaining to the price of the detergent and the associated price per liter. For the NBs, the price and price per liter were set at 62.95 Swedish kronor. For the PLs, the price and price per liter were set at 37.95 Swedish kronor. These figures were calculated by obtaining the average prices listed on retail websites for large,

Swedish grocery retailers and converting the figures to price per liter. These prices were then averaged by brand type and rounded to the nearest .95 to simulate realistic numbers that one would expect in practice.

Participants were asked to examine the detergent carefully, and a timer was set to ensure they could not move to the next page for 10 seconds. After moving on from the initial scenario and control picture, respondents were provided with another scenario:

“Imagine that a few weeks after you have bought the laundry detergent for your friend, you need to go to the grocery store again. This time you need to buy laundry detergent for yourself. You browse the options in the store and remember the detergent that your friend had asked for and decide to take a second look.”

After this scenario, the participants were provided with a new detergent picture that matched the brand they had previously been exposed to. They were randomly allocated to a treatment that featured either no shrinkflation, 10%, 15%, or 20% shrinkflation. In the no shrinkflation condition, the product volume, size, and price per liter remained completely unchanged. In the 10%, 15%, and 20% treatments, the product volumes, price per liter, and product size were correspondingly altered. Table 5 summarizes the price calculations for brand types at different levels of shrinkflation used in the treatments.

Table 5. Price per Liter Calculations

Brand	Size in liters	Average Price in SEK	Converted Price per Liter in SEK	Average Price per Liter by Brand Type	Average Price per Liter by Shrinkflation Amount
<i>Via</i>	.76	51.93	68.33	NB 62.95*	None: 1L = 62.95 10%: 900ml = 69.94 15%: 850ml = 74.06 20%: 800 = 78.69
<i>A+</i>	.88	50.19	57.03		
<i>ICA Basic</i>	.75	22.27	29.69	PL 37.95*	None: 1L = 37.95 10%: 900ml = 42.17 15%: 850ml = 44.65 20%: 800ml = 47.44
<i>Coop</i>	1	46.95	46.95		

* Rounded to nearest .95

The respondents were again asked to examine the laundry detergent carefully, and a timer was enabled. See Appendix D for the pictures used in the treatments.

4.3 Measures

Following exposure to one of the treatments, the respondents were provided with identical survey questions (see Appendix E). With few exceptions, the measures used in this study were adapted from previous research and were on a 7-point Likert scale. The measures used in the study are elaborated on below.

Awareness of shrinkflation within the treatment was measured by asking respondents if they noticed a change in the laundry detergent between the imagined trips on a nominal scale with the answer choices being either “Yes” or “No”. This question was created by the authors, and the lack of complexity of the measure was intended to gain enough information without biasing respondents if they had not noticed the shrinkflation. Furthermore, measuring a specific level of awareness was not appropriate as respondents would either be aware or unaware.

Satisfaction with the offer and brand were measured using statements from research by Hwang et al. (2021). Offer satisfaction was chosen rather than product satisfaction, as this was determined to capture realistic consumer perceptions more accurately. In this case, offer satisfaction comprises not only satisfaction with the product but also other aspects such as the price per liter and volume that participants were exposed to. The measures were adapted to be on a 7-point Likert scale ranging from “strongly disagree” to “strongly agree”, and the statements included, “I am satisfied with the new offer/brand”, “I am happy with the new offer/brand”, and “I am delighted with the new offer/brand”. When performing reliability analyses on the measures, Cronbach’s alphas of .967 and .965 were obtained for offer satisfaction and brand satisfaction, and indexes were created.

The measures for product and brand purchase intentions were adapted from previous research by Grewal, Monroe, and Krishnan (1998). Respondents were asked to indicate the probability of buying the product/brand, considering the product/brand, and the likelihood of purchasing the product/brand after seeing the laundry detergent during their second shopping trip. The measures were on a 7-point Likert scale ranging from “very low” to “very high”. After performing reliability analyses, Cronbach’s alphas of .964 and .970 were obtained for measures relating to product and brand purchase intentions, and indexes were created.

To capture WOM intentions for the product and brand, respondents were asked to indicate their disagreement or agreement with statements relating to how they would speak about the product and brand. The statements included, “I would say positive things about the laundry detergent/brand to other people”, “I would recommend the laundry detergent/brand to someone who seeks my advice”, and “I would encourage friends and relatives to buy this laundry detergent/brand”. These measures were adopted from Fullerton (2005) and were on a

7-point Likert scale ranging from “strongly disagree” to “strongly agree”. Reliability analyses were performed grouping the WOM intentions relating to the product and brand. A Cronbach’s alphas of .943 and .856 were obtained for product and brand WOM intentions, and indexes were created.

To reduce complexity within our results, we chose to combine purchase intentions, WOM intentions, and satisfaction for the product and brand further. It was determined appropriate to combine these variables as they can all be considered downstream effects, and academia has consistently proven the links between them. Menidjel et al. (2019) explain that marketing activities lead to satisfaction, ultimately affecting customer loyalty. They note research showing positive links between satisfaction and purchase intentions, and satisfaction and WOM intentions.

A reliability analysis on the measures for the product-related variables provided a Cronbach’s alpha of .953, and an index we refer to as product behavioral intentions was created. A reliability analysis on the brand measures produced a Cronbach’s alpha of .964, and an index called brand behavioral intentions was formed.

Measures for our proposed mediators (offer fairness, brand trust, and brand credibility) were also included in the survey. Offer fairness was recorded using measures adapted from Martin, Ponder, and Lueg (2018) who examined pricing fairness. Respondents were asked to indicate their agreement or disagreement with the statements, “The laundry detergent offer is fair”, “The laundry detergent offer is reasonable”, and “The laundry detergent offer is acceptable”. The statements were on a 7-point Likert scale ranging from “strongly disagree” to “strongly agree”. A reliability analysis provided a Cronbach’s alpha of .964, and an index was created.

Brand trust measures were obtained from research conducted by Hsieh and Hiang (2004). Survey respondents were asked to indicate how much they agreed or disagreed with the statements, “The brand can be relied upon to keep promises”, “The brand is trustworthy”, and “I have full confidence in the brand”. The measures were on a 7-point Likert scale ranging from “completely disagree” to “completely agree”. A Cronbach’s alpha of .946 was acquired from a reliability analysis, and an index was created.

Our final mediator to be investigated, brand credibility, was adapted from adjective pairs on 7-point Likert scales used by Bigné-Alcañiz et al. (2009). Respondents were asked to rate whether they thought the brand was: not sincere/sincere, not an expert/an expert, not honest/honest, and inexperienced/experienced. A reliability analysis was performed on these measures, resulting in a Cronbach’s alpha of .798, and an index was created.

Measures for the proposed moderators, inflation impact and shrinkflation knowledge were also included in the survey. Existing measures for inflation impact were not found in theory, so they were created for the purpose of this study. Participants were asked to indicate their level of agreement with the following statements: “Inflation has made it harder for me to afford things that I regularly purchase”, “Inflation has made it necessary for me to control my budget more tightly”, “Inflation has caused me to change the amount that I buy”, and “Inflation has caused me to change the items that I buy”. These statements were on a 7-point Likert scale with endpoints of “strongly disagree” and “strongly agree”. A reliability analysis provided a Cronbach’s alpha of .912, and an index was created.

Measures for previous knowledge about shrinkflation were adapted from research by Machleit, Allen, and Madden (1993). After being provided with a brief definition,

participants were asked to indicate their level of familiarity with shrinkflation using adjective pairs on a 7-point Likert scale. The pairs used were unfamiliar/familiar, not knowledgeable/knowledgeable, and inexperienced/experienced. A reliability analysis was conducted, and a Cronbach's alpha of .956 was obtained, after which, an index was created.

At the conclusion of the survey, several questions were included to measure the demographics of respondents. Table 6 provides a summary of the measures used in the survey, their origin, Cronbach's alphas, and indexes that were created.

Table 6. Measures

Construct	Measurement Items	Sources	Cronbach's Alpha
<i>Shrinkflation Awareness</i>	Yes No	-	n/a
<i>Offer Satisfaction</i>	I am satisfied with the new offer. I am happy with the new offer. I am delighted with the new offer.	Hwang et al. (2021)	.967
<i>Product Purchase Intentions</i>	If I were going to buy laundry detergent, the probability of buying this product is... The probability I would consider buying this product is... The likelihood that I would purchase this product is...	Grewal, Monroe, and Krishnan (1998).	.964
<i>Product WOM Intentions</i>	I would say positive things about the laundry detergent to other people. I would recommend the laundry detergent to someone who seeks my advice. I would encourage friends and relatives to buy this laundry detergent.	Fullerton (2005)	.943
<i>Brand Satisfaction</i>	I am satisfied with the laundry detergent brand. I am happy with the laundry detergent brand. I am delighted with the laundry detergent brand.	Hwang et al. (2021)	.965
<i>Brand Purchase Intentions</i>	If I were going to buy laundry detergent, the probability of buying from this brand is... The probability I would consider buying from this brand is... The likelihood that I would purchase this brand is...	Grewal, Monroe, and Krishnan (1998)	.970

<i>Brand WOM Intentions</i>	I would say positive things about the brand to other people. I would recommend the brand to someone who seeks my advice. I would encourage friends and relatives to buy this brand.	Fullerton (2005)	.956
<i>Product Behavioral Intentions</i>	<i>Above measures for offer satisfaction, product purchase intentions, and product WOM intentions were used.</i>	Hwang et al. (2021) Grewal, Monroe, and Krishnan (1998) Fullerton (2005)	.953
<i>Brand Behavioral Intentions</i>	<i>Above measures for brand satisfaction, brand purchase intentions, and brand WOM intentions were used.</i>	Hwang et al. (2021) Grewal, Monroe, and Krishnan (1998) Fullerton (2005)	.964
<i>Offer Fairness</i>	The laundry detergent offer is fair. The laundry detergent offer is reasonable. The laundry detergent offer is acceptable.	Martin, Ponder, and Lueg (2018)	.964
<i>Brand Trust</i>	The brand can be relied upon to keep promises. The brand is trustworthy. I have full confidence in the brand.	Hsieh and Hiang (2004)	.946
<i>Brand Credibility</i>	Not sincere – Sincere Not an expert – An expert Not honest – Honest Inexperienced – Experienced	Bigné-Alcañiz et al. (2009)	.798
<i>Inflation Impact</i>	Inflation has made it harder for me to afford things that I regularly purchase. Inflation has made it necessary for me to control my budget more tightly. Inflation has caused me to change the amount that I buy. Inflation has caused me to change the items that I buy.	-	.912
<i>Shrinkflation Knowledge</i>	Unfamiliar – Familiar Not knowledgeable – Knowledgeable Inexperienced – Experienced	Machleit, Allen, and Madden (1993).	.956

4.4 Grouping Variables

Several grouping variables were created to aid in the analysis of the data. The main grouping variable used throughout the study related to shrinkflation exposure in the experiment.

Treatments were collapsed regardless of brand, brand type, or level of shrinkflation, and the groups contained all those that were not exposed to shrinkflation (N = 94) and those that were exposed to shrinkflation (N = 289).

An additional grouping variable was created that sorted respondents based on the level of shrinkflation they were exposed to, regardless of brand or brand type. This 4-group variable contained those that were exposed to no shrinkflation (N = 94), 10% shrinkflation (N = 90), 15% shrinkflation (N = 95), and 20% shrinkflation (N = 104).

A grouping variable relating to awareness of the shrinkflation in the treatments was also created. This variable contained factors based only on those who were exposed to shrinkflation and were unaware of it (N = 92) and aware of it (N = 197).

Two grouping variables relating to brand type were crafted. The first variable split respondents based on which brand type they were exposed to, NBs (N = 194) or PLs (N = 189). The next variable was created by collapsing treatments based on brand type and shrinkflation exposure, leading to four groups consisting of NBs and no shrinkflation (N = 44), NBs with shrinkflation (N = 150), PLs and no shrinkflation (N = 50), and PLs with shrinkflation (N = 139).

A similar process was carried out for two grouping variables relating to the financial impact of inflation. The first variable split respondents based if they reported that inflation had impacted them to a lower degree (N = 92) or to a higher degree (N = 275). The second variable was created by combining the shrinkflation exposure variable with the above inflation impact variable, leading to four groups which contained those less impacted by

inflation with no shrinkflation exposure (N = 31), less impact with shrinkflation (N = 61), higher inflation impact and no shrinkflation exposure (N = 57), and higher impact with shrinkflation exposure (N = 218). 16 respondents were excluded from these groups because they answered at the midpoint, meaning that they neither agreed nor disagreed with statements about how inflation has financially impacted them.

The final grouping variables created related to respondents' previous knowledge about shrinkflation. The first grouping variable contained respondents who had less general knowledge about shrinkflation (N = 194) and those who had more knowledge (N = 189). Due to the questions' scaling, midpoint respondents were not removed, and those with means of 1-4 were classified as less knowledgeable, and those with 4.33-7 were classified as more knowledgeable. The last grouping variable was created by combining the shrinkflation exposure group with the above shrinkflation knowledge group which led to four groups comprising less knowledgeable participants not exposed to shrinkflation (N = 55), less knowledgeable participants exposed to shrinkflation (N = 139), those with more knowledge and no shrinkflation (N = 39), and those with more knowledge with shrinkflation (N = 39).

As some of the above variables are composed of groups of different sizes, analyses were performed where relevant to ensure validity when they were compared, which is detailed in Section 5.

4.5 Significance Level

Marketing research commonly employs a threshold of .05 for significance (Rosekrans, 1969). This *p*-value indicates the probability of making a Type 1 error, also known as a false-positive. In our case, an example would be falsely confirming that shrinkflation leads to

worse behavioral intentions when this is not actually the case. Researchers are often encouraged to select a significance level based on individual risks that might be incurred from use of the data, with less need for stringent, small levels for less risk. We have chosen to set a significance level of .05 for the statistical analyses in this study as this is sufficiently rigorous for our purposes.

5. Results

5.1 General Analysis: Shrinkflation

In the following section, the results and statistical analyses are presented for H1a-c. To test H1a and examine if shrinkflation exposure leads to less positive product and brand behavioral intentions, an Independent Samples *t*-Test was performed. Indexes for product behavioral intentions and brand behavioral intentions were used as inputs for the test, and those that were exposed to shrinkflation (N = 284) were compared against those that were not exposed to shrinkflation in the treatments (N = 94).

The results indicate that customers have significantly worse product behavioral intentions ($M_{Shrinkflation} = 2.69$, $SD = 1.31$; ($M_{No Shrinkflation} = 3.60$, $SD = 1.42$, $p < .001$) and brand behavioral intentions ($M_{Shrinkflation} = 2.76$, $SD = 1.41$; $M_{No Shrinkflation} = 3.70$, $SD = 1.41$, $p < .001$) when exposed to shrinkflation, compared with those that were not exposed to shrinkflation. We, therefore, find empirical support for hypothesis H1a. A summary of the results can be found in Table 7.

Table 7. H1a: No Shrinkflation vs. Shrinkflation

Index	Significance Level	No Shrinkflation Mean N = 94	Shrinkflation Mean N = 289
<i>Product Behavioral Intentions</i>	<.001*	3.60	2.69
<i>Brand Behavioral Intentions</i>	<.001*	3.70	2.76

* Significant at the $p = .05$ level

A similar analysis using an Independent Samples *t*-Test was performed to test H1b and see if those that were exposed to shrinkflation and noticed it had less positive product and brand

behavioral intentions than those exposed to shrinkflation that did not notice it. The same indexes for product and brand behavioral intentions were used as inputs for the test, and those with awareness of the shrinkflation (N = 197) were compared against those that were unaware (N = 92). Those that were not exposed to shrinkflation were omitted from this analysis (N = 94).

The results indicate that those aware of the shrinkflation have significantly worse product behavioral intentions ($M_{Aware} = 2.33$, $SD = 1.09$; $M_{Unaware} = 3.46$, $SD = 1.39$, $p < .001$) and brand behavioral intentions ($M_{Aware} = 2.41$, $SD = 1.24$; $M_{Unaware} = 3.51$, $SD = 1.45$, $p < .001$) than those unaware of the shrinkflation. We, thus, find empirical support for H1b. Table 8 presents a summary of the results for this analysis.

Table 8. H1b: Unaware vs. Aware

Index	Significance Level	Shrinkflation, Unaware	Shrinkflation, Aware
		Mean N = 92	Mean N = 197
<i>Product Behavioral Intentions</i>	<.001*	3.46	2.33
<i>Brand Behavioral Intentions</i>	<.001*	3.51	2.41

* Significant at the $p = .05$ level

After establishing that shrinkflation and awareness of shrinkflation negatively impact product and brand behavioral intentions, we next chose to examine whether higher levels of shrinkflation would produce even more pronounced effects by testing H1c. As this analysis would require comparing more than two groups of unequal size, a One-way ANOVA Scheffé was performed. The indexes for product and brand behavioral intentions were used as inputs for the dependent variables, and the groups comprised of different levels of shrinkflation

(Group 1: No shrinkflation, N = 94; Group 2: 10% shrinkflation, N = 90; Group 3: 15% shrinkflation, N = 95; and Group 4: 20% shrinkflation, N = 104) were compared.

While the general results of this analysis showed between-group significance for both product ($p < .001$) and brand ($p < .001$) behavioral intentions, we were most interested in specific comparisons between the groups actually exposed to shrinkflation, and thus, planned contrasts were performed to examine differences between: Groups 2 and 3 (10% shrinkflation and 15% shrinkflation), Groups 2 and 4 (10% shrinkflation and 20% shrinkflation), and Groups 3 and 4 (15% shrinkflation and 20% shrinkflation). When comparing these groups, the results show a pattern whereby the higher shrinkflation condition performed worse than the lower shrinkflation condition, however, statistically significant differences were not found between any of the examined groups.

When comparing the 10% shrinkflation group with the 15% shrinkflation group, the higher shrinkflation condition performed slightly worse for product behavioral intentions

($M_{10\% \text{ Shrinkflation}} = 2.84$, $SD = 1.40$; $M_{15\% \text{ Shrinkflation}} = 2.67$, $SD = 1.30$, $p = .868$) and brand behavioral intentions ($M_{10\% \text{ Shrinkflation}} = 2.88$, $SD = 1.43$; $M_{15\% \text{ Shrinkflation}} = 2.83$, $SD = 1.46$, $p = .995$).

Similarly, when comparing the 10% shrinkflation group with the 20% shrinkflation group, the higher shrinkflation condition performed marginally worse for product behavioral intentions

($M_{10\% \text{ Shrinkflation}} = 2.84$, $SD = 1.40$; $M_{20\% \text{ Shrinkflation}} = 2.58$, $SD = 1.22$, $p = .604$) and brand behavioral intentions ($M_{10\% \text{ Shrinkflation}} = 2.88$, $SD = 1.43$; $M_{20\% \text{ Shrinkflation}} = 2.59$, $SD = 1.34$, $p = .557$).

Finally, comparing the 15% shrinkflation group with the 20% shrinkflation group showed slight differences in favor of the lower shrinkflation condition for both product behavioral intentions ($M_{15\% \text{ Shrinkflation}} = 2.67$, $SD = 1.30$; $M_{20\% \text{ Shrinkflation}} = 2.58$, $SD = 1.22$, $p = .969$) and brand behavioral intentions ($M_{15\% \text{ Shrinkflation}} = 2.83$, $SD = 1.46$; $M_{20\% \text{ Shrinkflation}} = 2.59$, $SD = 1.34$, $p = .700$).

While the results show tendencies in line with our hypothesis, we must reject H1c due to the lack of statistical significance and conclude that there are no notable differences in product and brand behavioral intentions between higher and lower levels of shrinkflation. Table 9 presents a summary of the results for H1c.

Table 9. H1c: Planned Contrasts – Shrinkflation Levels

Index	10% Shrinkflation vs. 15% Shrinkflation			10% Shrinkflation vs. 20% Shrinkflation			15% Shrinkflation vs. 20% Shrinkflation		
	Sig. Level	10% Mean N = 90	15% Mean N = 95	Sig. Level	10% Mean N = 90	20% Mean N = 104	Sig. Level	15% Mean N = 95	20% Mean N = 104
<i>Product Behavioral Intentions</i>	.868	2.84	2.67	.604	2.84	2.58	.969	2.67	2.58
<i>Brand Behavioral Intentions</i>	.995	2.88	2.83	.557	2.88	2.59	.700	2.83	2.59

* Significant at the $p = .05$ level

5.2 Mediation: Perceived Offer Fairness, Brand Trust, and Brand Credibility

After obtaining results that indicate that shrinkflation and awareness of shrinkflation lead to negative effects for product and brand behavioral intentions, but that the level of shrinkflation is inconsequential, we chose to examine if the relationships between shrinkflation and product and brand behavioral intentions were mediated by other effects, thereby explaining

the relationship between these variables in more detail. As described earlier, the mediating variables in focus included offer fairness, brand trust, and brand credibility.

To test H2, several mediation analyses using Hayes Process (v 4.2) Model 4 in SPSS were conducted (Confidence level = 95%, 5000 bootstrap samples). In results presented from the Hayes models, *b*-values refer to the effect size and orientation, meaning that negative/positive values indicate negative/positive effects, with larger values in either direction indicating a bigger effect. Within the mediation results, other effects are of interest, namely the indirect effects and direct effects. The indirect effect is, in essence, the effect of the mediator in the relationship between shrinkflation and the behavioral intentions. Significance is found using confidence intervals rather than *p*-values, and if the range of the upper and lower confidence intervals does not contain zero, significance is present. Direct effects, on the other hand, are remaining effects that cannot be explained by the examined mediator in the relationship, and significance is measured using *p*-values. The total effect is not elaborated on in our results, however, it is the sum of direct and indirect effects, and corresponds to the results found in H1a.

Beginning with the potential mediating effect of perceived offer fairness, the shrinkflation variable was set as the independent variable in the model, the mediator selected was offer fairness, and the dependent variables used were product and brand behavioral intentions. The results obtained from this analysis showed that shrinkflation has no direct effect ($b = -.18, p = .178$) on product behavioral intentions, but an indirect effect ($b = -.73, LLCI = -.93, ULCI = -.53$) is present. Similar results were obtained for brand behavioral intentions, with no direct effect seen ($b = -.16, p = .243$) and a significant indirect effect ($b = -.78, LLCI = -.99, ULCI = -.56$). These results confirm a full mediating effect, with shrinkflation causing a negative

impact on perceptions of offer fairness, which then negatively impacts product and brand behavioral intentions.

Brand trust was examined as the next potential mediator of the relationship between shrinkflation and product and brand behavioral intentions. Process Model 4 was used again, and the mediator was changed to brand trust. The results indicated that a direct effect was present ($b = -.26, p = .024$) between shrinkflation and product behavioral intentions, as well as an indirect effect of brand trust ($b = -.65, LLCI = -.89, ULCI = -.41$), meaning that a partial mediating effect is present. There was no direct effect between shrinkflation and brand behavioral intentions ($b = -.23, p = .053$), however, the indirect effect of brand trust was significant ($b = -.71, LLCI = -.97, ULCI = -.46$), indicating that full mediation is present for this dependent variable.

The final prospective mediator of the relationship between shrinkflation and product and brand behavioral intentions examined was brand credibility. Process Model 4 was used again with brand credibility selected as the mediator. Results obtained from this analysis showed direct effects for both the relationship between shrinkflation and product behavioral intentions ($b = -.50, p < .001$) and between shrinkflation and brand behavioral intentions ($b = -.49, p < .001$). Further significance was found for the indirect effect of brand credibility on product behavioral intentions ($b = -.41, LLCI = -.60, ULCI = -.22$) and the indirect effect of brand credibility on brand behavioral intentions ($b = -.44, LLCI = -.65, ULCI = -.24$). Because of the presence of direct and indirect effects, brand credibility can be considered to partially mediate both relationships.

Based on the results of the mediation testing, we find empirical support for H2. Offer fairness was found to fully mediate the relationship between shrinkflation and both product and brand behavioral intentions, and brand trust fully mediates between shrinkflation and brand behavioral intentions. There is a partial mediating effect of brand credibility on product and brand behavioral intentions and a partial mediation of brand trust on product behavioral intentions. Furthermore, all effects of the mediators are negative in orientation, reconfirming the adverse effects of shrinkflation on intentions. A summary of the results can be found in Table 10.

Table 10. H2: Mediation of Offer Fairness, Brand Trust, and Brand Credibility

Independent Variable	Mediator	Dependent Variable	Effect Type	Effects
<i>Shrinkflation</i>	→ Offer Fairness →	<i>Product Behavioral Intentions</i>	Indirect	$b = -.73$ LLCI = $-.93$ ULCI = $-.53$ **
<i>Shrinkflation</i>	→	<i>Product Behavioral Intentions</i>	Direct	$b = -.18$ $p = .178$
<i>Shrinkflation</i>	→	<i>Product Behavioral Intentions</i>	Total	$b = -.91$ $p < .001^*$
<i>Shrinkflation</i>	→ Offer Fairness →	<i>Brand Behavioral Intentions</i>	Indirect	$b = -.78$ LLCI = $-.99$ ULCI = $-.56$ **
<i>Shrinkflation</i>	→	<i>Brand Behavioral Intentions</i>	Direct	$b = -.16$ $p = .243$
<i>Shrinkflation</i>	→	<i>Brand Behavioral Intentions</i>	Total	$b = -.94$ $p < .001^*$
<i>Shrinkflation</i>	→ Brand Trust →	<i>Product Behavioral Intentions</i>	Indirect	$b = -.65$ LLCI = $-.89$ ULCI = $-.41$ **
<i>Shrinkflation</i>	→	<i>Product Behavioral Intentions</i>	Direct	$b = -.26$ $p = .024^*$
<i>Shrinkflation</i>	→	<i>Product Behavioral Intentions</i>	Total	$b = -.91$ $p < .001^*$

<i>Shrinkflation</i>	→	Brand Trust	→	<i>Brand Behavioral Intentions</i>	Indirect	$b = -.71$ LLCI = $-.97$ ULCI = $-.46$ **
<i>Shrinkflation</i>			→	<i>Brand Behavioral Intentions</i>	Direct	$b = -.23$ $p = .053$
<i>Shrinkflation</i>			→	<i>Brand Behavioral Intentions</i>	Total	$b = -.94$ $p < .001^*$
<i>Shrinkflation</i>	→	Brand Credibility	→	<i>Product Behavioral Intentions</i>	Indirect	$b = -.41$ LLCI = $-.60$ ULCI = $-.22$ **
<i>Shrinkflation</i>			→	<i>Product Behavioral Intentions</i>	Direct	$b = -.50$ $p < .001^*$
<i>Shrinkflation</i>			→	<i>Product Behavioral Intentions</i>	Total	$b = -.91$ $p < .001^*$
<i>Shrinkflation</i>	→	Brand Credibility	→	<i>Brand Behavioral Intentions</i>	Indirect	$b = -.44$ LLCI = $-.65$ ULCI = $-.24$ **
<i>Shrinkflation</i>			→	<i>Brand Behavioral Intentions</i>	Direct	$b = -.49$ $p < .001^*$
<i>Shrinkflation</i>			→	<i>Brand Behavioral Intentions</i>	Total	$b = -.94$ $p < .001^*$

* Significant at the $p = .05$ level

** Significant at 95% CI

5.3 Moderation: Brand Type – NBs vs. PLs

After finding support for the mediating effects, we next chose to examine whether there were moderating effects of the relationship between shrinkflation and the behavioral intention variables, thereby learning if the results differed under certain conditions. We began by first testing H3 to see if PLs fare better than NBs when both brand types engage in shrinkflation.

We started this analysis by performing Two-way ANOVAs to examine whether significant interaction effects existed between our shrinkflation variable (No shrinkflation: $N = 94$, Shrinkflation: $N = 289$) and our brand type variable (NB: $N = 194$, PL: $N = 189$). Results from this test showed significant interaction effects for product ($p = .007$) and brand

behavioral intentions ($p = .004$), providing evidence in support of H3. A simple moderation model in Process (Model 1) confirmed these results with the same p -values.

As described by Söderlund (2023), moderators can be classified as either “quasi” moderators or “pure” moderators depending on whether correlations exist between the moderating variable and the independent and/or dependent variables. Thus, Pearson’s correlations were conducted. The results show no significant correlation between brand type and our shrinkflation exposure variable ($r = -.044$, $p = .392$) and weak correlations between brand type and product ($r = -.177$, $p = .022$) and brand ($r = -.119$, $p = .020$) behavioral intentions. Therefore, brand type can be considered a quasi moderator in this context.

We then performed planned contrasts using One-way ANOVAs (Scheffé) to investigate potential differences in means of NBs and PLs for our dependent variables. The factor used for this model included groups based on brand type and presence of shrinkflation, and general significance was found between groups for product ($p < .001$) and brand ($p < .001$) behavioral intentions. The planned contrasts in focus compared Group 1 (NB, No Shrinkflation: $N = 44$) and Group 2 (NB, Shrinkflation: $N = 150$), and Group 3 (PL, No Shrinkflation: $N = 50$) and Group 4 (PL, Shrinkflation: $N = 139$).

When examining the NB groups, shrinkflation exposure led to significantly worse behavioral intentions for both the product ($M_{NB\ Shrinkflation} = 2.76$, $SD = 1.24$; $M_{NB\ No\ Shrinkflation} = 4.13$, $SD = 1.37$, $p < .001$) and the brand ($M_{NB\ Shrinkflation} = 2.83$, $SD = 1.38$; $M_{NB\ No\ Shrinkflation} = 4.28$, $SD = 1.34$, $p < .001$). However, when comparing the PL groups, significant differences in intentions were notably absent for the product ($M_{PL\ Shrinkflation} = 2.61$, $SD = 1.37$;

$M_{PL\ No\ Shrinkflation} = 3.13$, $SD = 1.31$, $p = <.122$) and brand ($M_{PL\ Shrinkflation} = 2.68$, $SD = 1.43$; $M_{PL\ No\ Shrinkflation} = 3.19$, $SD = 1.27$, $p = <.180$). As this ANOVA compares groups of unequal sizes, Levene's Test for Equality of Variance was also performed. Results confirmed that there is homogeneity of variance in the compared groups with no significance found for product ($p = .679$) or brand ($p = .896$) behavioral intentions, meaning that there is a low risk of falsely rejecting a null hypothesis because of underestimated p -values. The results provide further support for H3, indicating that differences exist between NBs, with NBs being more susceptible to negative effects when engaging in shrinkflation. Table 11 provides a summary of these results.

Table 11. H3: Planned Contrasts – NBs and PLs

Index	Sig. Level	Group 1 vs. Group 2		Sig. Level	Group 3 vs. Group 4	
		NB	NB		PL	PL
		No Shrinkflation Mean N = 90	Shrinkflation Mean N = 95		No Shrinkflation Mean N = 90	Shrinkflation Mean N = 104
<i>Product Behavioral Intentions</i>	<.001*	4.13	2.76	.122	3.13	2.61
<i>Brand Behavioral Intentions</i>	<.001*	4.28	2.83	.180	3.19	2.68

* Significant at the $p = .05$ level

As previous research indicates that differences exist between NBs and PLs for offer fairness, brand trust, and brand credibility, we also chose to examine whether moderated mediation exists when shrinkflation is introduced. For this, Hayes Process Model 7 was utilized (Confidence level = 95%, 5000 bootstrap samples). The mediators were tested one at a time for both product and brand behavioral intentions, the shrinkflation variable was, again, used as the independent variable, and brand type was used as the moderator. Within the results, the

index of moderated mediation was examined, and confidence intervals were used to determine significance.

Results from the model indicate a lack of moderated mediation for brand type on product behavioral intentions for perceived offer fairness ($b = .127$, LLCI = $-.237$, ULCI = $.521$), and a presence of moderated mediation for brand trust ($b = .612$, LLCI = $.179$, ULCI = 1.059) and brand credibility ($b = .460$, LLCI = $.114$, ULCI = $.836$). A similar pattern was seen for brand behavioral intentions. Moderated mediation was not found for offer fairness ($b = .134$, LLCI = $-.271$, ULCI = $.570$), but was found for brand trust ($b = .670$, LLCI = $.189$, ULCI = 1.162) and brand credibility ($b = .500$, LLCI = $.134$, ULCI = $.911$). Both NBs and PLs produced negative effects in this model, with NBs having stronger effects. The combination of these negative effects leads to the positive indexes (b -values) in the results.

Thus, this analysis confirms that brand type not only moderates the relationship between shrinkflation and product and brand behavioral intentions, but also moderates the mediators, brand trust and brand credibility. A summary of these results is presented in Table 12.

Table 12. H3: Moderation and Moderated Mediation – Brand Type x Shrinkflation Presence

Dependent Variable	Mediator	Interaction effect Two-way ANOVA	Moderation Process Model 1	Index of Moderated Mediation Process Model 7	Direct Effect Process Model 7	Total Effect
<i>Product Behavioral Intentions</i>	-	.007*	.007*	-	-	
	Offer Fairness	-	-	<i>b</i> = .127 LLCI = -.24 ULCI = .52	<i>b</i> = -.18 <i>p</i> = .178	
	Brand Trust	-	-	<i>b</i> = .612 LLCI = .18 ULCI = 1.06 **	<i>b</i> = -.26 <i>p</i> = .024*	
	Brand Credibility	-	-	<i>b</i> = .460 LLCI = .11 ULCI = .84 **	<i>b</i> = -.50 <i>p</i> = <.001*	<i>b</i> = -.91 <i>p</i> = <.001*
<i>Brand Behavioral Intentions</i>	-	.004*	.004*	-	-	
	Offer Fairness	-	-	<i>b</i> = .134 LLCI = -.27 ULCI = .57	<i>b</i> = -.16 <i>p</i> = .243	
	Brand Trust	-	-	<i>b</i> = .670 LLCI = .19 ULCI = 1.16 **	<i>b</i> = -.23 <i>p</i> = .053	
	Brand Credibility	-	-	<i>b</i> = .500 LLCI = .13 ULCI = .91 **	<i>b</i> = -.49 <i>p</i> = <.001*	<i>b</i> = -.94 <i>p</i> = <.001*

* Significant at the *p* = .05 level

** Significant at the 95% CI

5.4 Moderation: Financial Impact from Inflation – Lower Impact vs. Higher Impact

We next tested H4 to determine if those that stated they were more impacted by inflation had worse intentions as a result of shrinkflation than those that stated they were less impacted by inflation.

The analysis began with Two-way ANOVAs to examine the interaction effects between the shrinkflation variable (No Shrinkflation: N = 94, Shrinkflation: N = 289) and the inflation impact variable (Lower impact: N = 92, Higher impact: N = 275). The results indicate non-significant interaction effects for product ($p = .113$) and brand ($p = .157$) behavioral intentions, and these results were further confirmed using Hayes Process Model 1 from which identical p -values were obtained.

While these results indicate there is no support for inflation impact as a moderating variable, we chose to continue with planned contrasts in One-way ANOVAs (Scheffe) to see if any meaningful patterns could be gleaned from the mean differences. A factor comprising four groups based on presence of shrinkflation and inflation impact was used for this model, and general significance was found between the groups for both product ($p < .001$) and brand ($p < .001$) behavioral intentions. The planned contrasts were performed to compare Group 1 (Lower Impact, No Shrinkflation: N = 31) and Group 2 (Lower Impact, Shrinkflation: N = 61) and Group 3 (Higher Impact, No Shrinkflation: N = 57) and Group 4 (Higher Impact, Shrinkflation: N = 218).

When comparing the higher inflation impact groups, the group exposed to shrinkflation displayed significantly worse product ($M_{Higher Infl. Impact, Shrinkflation} = 2.72$, $SD = 1.32$; $M_{Higher Infl. Impact, No Shrinkflation} = 3.85$, $SD = 1.40$, $p < .001$) and brand ($M_{Higher Infl. Impact, Shrinkflation} = 2.76$, $SD = 1.41$; $M_{Higher Infl. Impact, No Shrinkflation} = 3.90$, $SD = 1.40$, $p < .001$) behavioral intentions. However, when comparing the lower impact from inflation groups, no significant differences were found for both product

($M_{Lower Infl. Impact, Shrinkflation} = 2.61$, $SD = 1.27$; $M_{Lower Infl. Impact, No Shrinkflation} = 3.18$, $SD =$

1.38, $p = <.280$) and brand ($M_{\text{Lower Infl. Impact, Shrinkflation}} = 2.75$, $SD = 1.40$; $M_{\text{Lower Infl. Impact, No Shrinkflation}} = 3.37$, $SD = 1.41$, $p = <.269$) behavioral intentions. This ANOVA, again, compared groups of unequal sizes, and Levene's Test was performed to check for homogeneity of variance. Results confirmed this with no significance found for product ($p = .789$) or brand ($p = .965$) behavioral intentions. The results provide evidence that while financial impact from inflation cannot be proven to moderate the relationship between shrinkflation and product and behavioral intentions, a pattern is present that distinguishes those that feel more and less impacted. We, therefore, find partial support for H4. Table 13 provides a summary of these results.

Table 13. H4: Planned Contrasts – Lower and Higher Inflation Impact

Index	Group 1 vs. Group 2			Group 3 vs. Group 4		
	Sig. Level	Lower Impact No Shrinkflation Mean N = 31	Lower Impact Shrinkflation Mean N = 61	Sig. Level	Higher Impact No Shrinkflation Mean N = 57	Higher Impact Shrinkflation Mean N = 218
<i>Product Behavioral Intentions</i>	.280	3.18	2.61	<.001*	3.85	2.72
<i>Brand Behavioral Intentions</i>	.269	3.37	2.75	<.001*	3.90	2.76

* Significant at the $p = .05$ level

While there is a lack of theoretical knowledge to hypothesize a relationship between inflation impact and the mediating variables of offer fairness, brand trust, and brand credibility, we chose to also examine whether moderated mediation was present under the condition of shrinkflation as a robustness check for the previously found moderation results.

Hayes Process Model 7 was used to test for the moderated mediation. The model inputs consisted of offer fairness, brand trust, and brand credibility as the mediators, inflation impact

as the moderator, the shrinkflation variable as the independent variable, and finally, product and brand behavioral intentions as the dependent variables.

The results from this model show a lack of moderated mediation for inflation impact on product behavioral intentions for offer fairness ($b = -.207$, LLCI = $-.653$, ULCI = $.216$) and brand credibility ($b = -.358$, LLCI = $-.794$, ULCI = $.072$), and presence of moderated mediation for brand trust ($b = -.530$, LLCI = -1.064 , ULCI = $-.025$). When using brand behavioral intentions as the dependent variable, a similar pattern is present, and there is lack of moderated mediation for offer fairness ($b = -.222$, LLCI = $-.682$, ULCI = $.244$) and brand credibility ($b = -.389$, LLCI = $-.847$, ULCI = $.072$), while moderated mediation is present for brand trust ($b = -.584$, LLCI = -1.176 , ULCI = $-.003$). The presence of moderated mediation from inflation impact to brand trust is notable and will be examined more closely in Section 6. Table 14 presents a summary of these results.

Table 14. H4: Moderation and Moderated Mediation – Inflation Impact x Shrinkflation Presence

Dependent Variable	Mediator	Interaction effect Two-way ANOVA	Moderation Process Model 1	Index of Moderated Mediation Process Model 7	Direct Effect Process Model 7	Total Effect
<i>Product Behavioral Intentions</i>	-	.113	.113	-	-	
	Offer Fairness	-	-	$b = -.207$ LLCI = $-.65$ ULCI = $.22$	$b = -.19$ $p = .160$	
	Brand Trust	-	-	$b = -.530$ LLCI = -1.06 ULCI = $-.03$ **	$b = -.24$ $p = .042^*$	
	Brand Credibility	-	-	$b = -.358$ LLCI = $-.79$ ULCI = $.07$	$b = -.49$ $p = <.001^*$	$b = -.91$ $p = <.001^*$
<i>Brand Behavioral Intentions</i>	-	.157	.157	-	-	
	Offer Fairness	-	-	$b = -.222$ LLCI = $-.68$ ULCI = $.24$	$b = -.17$ $p = .225$	
	Brand Trust	-	-	$b = -.584$ LLCI = -1.18 ULCI = $-.003$ **	$b = -.21$ $p = .083$	
	Brand Credibility	-	-	$b = -.389$ LLCI = $-.85$ ULCI = $.07$	$b = -.48$ $p = <.001^*$	$b = -.94$ $p = <.001^*$

* Significant at the $p = .05$ level

** Significant at the 95% CI

5.5 Moderation: Existing Shrinkflation Knowledge – Lower vs. Higher

The final moderator examined in this study was shrinkflation knowledge, and we tested H5 to determine whether those with higher levels of shrinkflation knowledge would have worse intentions when exposed to shrinkflation than those with lower levels of shrinkflation knowledge.

Beginning with Two-way ANOVAs, the shrinkflation variable (No Shrinkflation: N = 94, Shrinkflation: N = 289) and the shrinkflation knowledge variable (Lower Knowledge: N = 194, Higher Knowledge: N = 189) were used to examine the interaction effects. The Two-way ANOVA revealed non-significant interaction effects for both product ($p = .591$) and brand ($p = .595$) behavioral intentions, and these results were echoed with p -values from Hayes Process Model 1.

The lack of interaction effects indicates an absence of a moderating effect of shrinkflation knowledge on the relationship between shrinkflation and the investigated intentions. However, we performed planned contrasts using results from One-way ANOVAs to determine whether there were identifiable patterns between the means of our knowledge groups. One-way ANOVAs (Scheffe) were conducted using a factor comprising four groups based on the presence of shrinkflation and the level of shrinkflation knowledge that participants had. A general significance between these groups was found for product ($p < .001$) and brand ($p < .001$) behavioral intentions. Within the planned contrasts Group 1 (Lower Knowledge, No Shrinkflation: N = 55) and Group 2 (Lower Knowledge, No Shrinkflation: N = 139) were compared, and Group 3 (Higher Knowledge, No Shrinkflation: N = 39) and Group 4 (Higher Knowledge, Shrinkflation: N = 150) were compared.

A comparison between the higher knowledge groups showed a pattern whereby the shrinkflation condition produced significantly worse product ($M_{Higher\ Knowledge,\ Shrinkflation} = 2.49, SD = 1.25; M_{Higher\ Knowledge,\ No\ Shrinkflation} = 3.46, SD = 1.31, p < .001$) and brand ($M_{Higher\ Knowledge,\ Shrinkflation} = 2.57, SD = 1.38; M_{Higher\ Knowledge,\ No\ Shrinkflation} = 3.57, SD = 1.34, p < .001$) behavioral intentions. Similarly, when looking at the lower knowledge

groups, significant differences were found for product ($M_{\text{Lower Knowledge, Shrinkflation}} = 2.90$, $SD = 1.34$; $M_{\text{Lower Knowledge, No Shrinkflation}} = 3.70$, $SD = 1.50$, $p = .003$) and brand ($M_{\text{Lower Knowledge, Shrinkflation}} = 2.97$, $SD = 1.44$; $M_{\text{Lower Knowledge, No Shrinkflation}} = 3.79$, $SD = 1.46$, $p = .004$) behavioral intentions. The groups compared in this ANOVA were of unequal sizes, so Levene's Test was performed. The results confirmed that there is homogeneity of variance in the compared groups with no significance found for product ($p = .356$) or brand ($p = .603$) behavioral intentions.

The results provide evidence of a similar effect of inflation on product and brand behavioral intentions regardless of the level of shrinkflation knowledge held by respondents. We, therefore, reject H5, and find that a higher level of shrinkflation knowledge does not lead to worse product and brand behavioral intentions. A summary of these results can be found in Table 15.

Table 15. H5: Planned Contrasts – Lower and Higher Shrinkflation Knowledge

Index	Sig. Level	Group 1 vs. Group 2		Sig. Level	Group 3 vs. Group 4	
		Lower Know. No Shrinkflation Mean N = 55	Lower Know. Shrinkflation Mean N = 139		Higher Know. No Shrinkflation Mean N = 39	Higher Know. Shrinkflation Mean N = 150
<i>Product Behavioral Intentions</i>	.003*	3.70	2.90	.001*	3.46	2.49
<i>Brand Behavioral Intentions</i>	.004*	3.79	2.97	.001*	3.57	2.57

* Significant at the $p = .05$ level

Despite the lack of theory for moderated mediation between shrinkflation knowledge and offer fairness, brand trust, and brand credibility, we also chose to examine these relationships as a robustness check for the moderation results.

Process Model 7 from Hayes was used for the analysis, and the same mediators of offer fairness, brand trust, and brand credibility were used as inputs for the mediators. Shrinkflation knowledge was selected as the moderator in this model, the shrinkflation variable was kept as the independent variable, and product and behavioral intentions were used as the dependent variables.

Results obtained from this model show a lack of significance in the bootstrap confidence interval for all the examined mediators. For product behavioral intentions, the index of moderated mediation results indicated a complete lack of moderated mediation for perceived offer fairness ($b = -.189$, LLCI = $-.570$, ULCI = $.192$), brand trust ($b = -.139$, LLCI = $-.592$, ULCI = $.322$), and brand credibility ($b = -.057$, LLCI = $-.420$, ULCI = $.311$). Significance was also absent for moderated mediation for brand behavioral intentions for perceived offer fairness ($b = -.200$, LLCI = $-.608$, ULCI = $.198$), brand trust ($b = -.153$, LLCI = $-.650$, ULCI = $.334$), and brand credibility ($b = -.062$, LLCI = $-.464$, ULCI = $.321$).

We, therefore, conclude that shrinkflation knowledge does not act as a moderator for either product or brand behavioral intentions, nor for offer fairness, brand trust, or brand credibility.

Table 16 provides a summary of these results.

Table 16. H5: Moderation and Moderated Mediation – Shrinkflation Knowledge x Shrinkflation Presence

Dependent Variable	Mediator	Interaction effect Two-way ANOVA	Moderation Process Model 1	Index of Moderated Mediation Process Model 7	Direct Effect Process Model 7	Total Effect
<i>Product Behavioral Intentions</i>	-	.591	.591	-	-	
	Offer Fairness	-	-	$b = -.189$ LLCI = -.57 ULCI = .19	$b = -.18$ $p = .178$	
	Brand Trust	-	-	$b = -.139$ LLCI = -.59 ULCI = .32	$b = -.26$ $p = .024^*$	
	Brand Credibility	-	-	$b = -.057$ LLCI = -.42 ULCI = .31	$b = -.50$ $p < .001^*$	$b = -.91$ $p < .001^*$
<i>Brand Behavioral Intentions</i>	-	.595	.595	-	-	
	Offer Fairness	-	-	$b = -.200$ LLCI = -.61 ULCI = .20	$b = -.16$ $p = .243$	
	Brand Trust	-	-	$b = -.153$ LLCI = -.65 ULCI = .33	$b = -.23$ $p = .053$	
	Brand Credibility	-	-	$b = -.062$ LLCI = -.46 ULCI = .32	$b = -.50$ $p < .001^*$	$b = -.94$ $p < .001^*$

* Significant at the $p = .05$ level

** Significant at the 95% CI

The results of our analyses are discussed in the following section, along with the practical and theoretical implications that arise from them. Table 17 features a summary of the hypotheses and their outcomes.

Table 17. Hypotheses Outcomes Summary

Hypothesis	Description	Outcome
<i>H1a</i>	Shrinkflation negatively impacts behavioral intentions	Supported
<i>H1b</i>	Awareness of shrinkflation negatively impacts behavioral intentions	Supported
<i>H1c</i>	The higher the level of shrinkflation, the worse the behavioral intentions	Rejected*
<i>H2</i>	Perceived offer fairness, brand trust, and brand credibility mediate the effects of shrinkflation on intentions	Supported
<i>H3</i>	Shrinkflation impacts NBs more negatively than PLs	Supported
<i>H4</i>	Shrinkflation leads to worse intentions for those more greatly impacted by inflation than those less impacted by inflation	Partially Supported
<i>H5</i>	Shrinkflation impacts those with more knowledge of shrinkflation to a greater degree than those with less knowledge	Rejected

* *Tendencies in line with hypothesis*

6. Discussion

The following section includes a discussion of the results and how they relate to theory. Implications that arise for firms and academia will also be discussed. Furthermore, future research opportunities to be investigated are presented. We began by presenting a revised model that summarizes our results.

6.1 Revised Model

Figure 2 contains a summary of the significant findings from the main study including the indirect, direct, and total effects obtained, as well as interaction effects from the brand type moderator. Following sections will discuss these results in relation to our initial hypotheses.

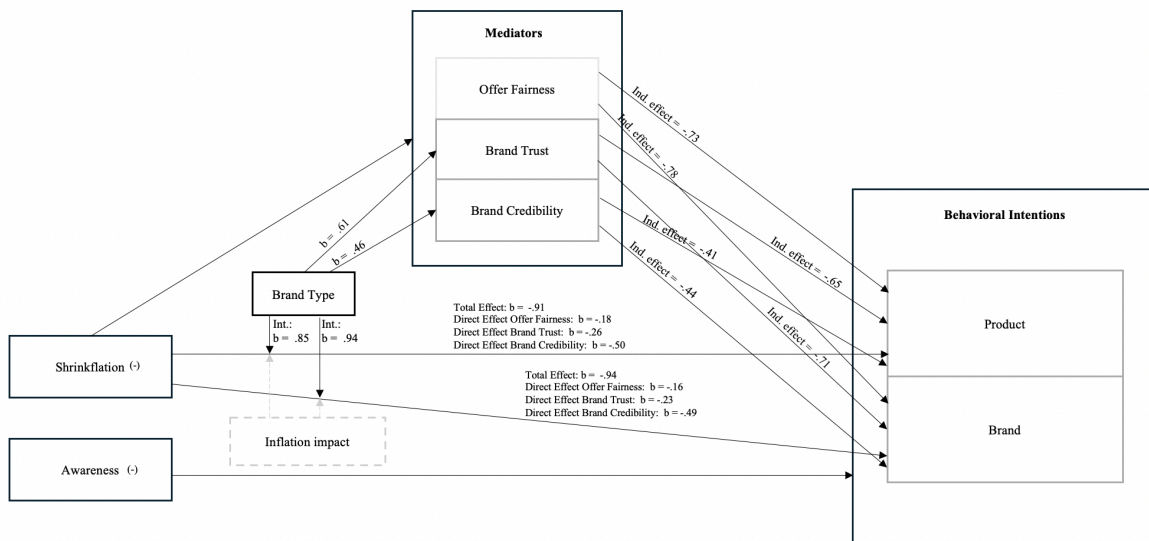


Figure 2. Revised Model

6.2 Shrinkflation and Awareness

The results show that customers exposed to shrinkflation display less positive product and brand behavioral intentions than those who are not exposed to it. Furthermore, they show that customers who notice shrinkflation occurrence display less positive product and brand behavioral intentions than those who do not notice it (but are exposed to it). These results

provide empirical support for H1a and H1b. Thus, the results indicate that if firms do not wish to decrease customers' product and brand behavioral intentions, they ought to carefully consider the potential drawbacks of employing the tactic of shrinkflation in inflationary times (H1a). Additionally, although customers may be unaware of shrinkflation occurrence, as reflected in this study where about one-third of respondents that were exposed to shrinkflation did not notice it, those who are aware of it display even worse product and brand behavioral intentions (H1b), thereby affecting the overall results for those that were exposed to shrinkflation. This means that although there are clear indications that firms can use shrinkflation as a way to pass on increased costs to consumers by exploiting their inattention as proposed by Çakır and Balagtas (2014), with a high degree of awareness in customers, this is a risky tactic.

These results are unsurprising, as they are in line with previous shrinkflation literature. For instance, around one-third of the respondents did not notice the occurrence of shrinkflation, even though they were evaluating just one laundry detergent in our study unlike the multiple options typically present in real-life shopping scenarios. This finding supports the idea that consumers frequently overlook reductions in package size and may not thoroughly assess explicit price information. While we might anticipate even lower awareness in real-world settings due to factors like cognitive overload, the abundance of choices, distractions, and time gaps between shopping trips, our results suggest that customers are paying more attention to package size reductions during inflationary periods than the existing shrinkflation literature implies. Furthermore, given that shrinkflation negatively affects customers' product and brand behavioral intentions, customers dislike it. Thus, the results indicate support for the notion of, for instance, "shrinkflation aversion" as proposed by Evangelidis (2023), negative reactions towards shrinkflation as proposed by Kachersky (2011), and negative impacts on

downstream behavior as proposed by Wilkins, Beckenuyte, and Butt (2016). As such, consumers seem not to display any forgiveness toward this tactic in inflationary times as indicated by Ferguson (2014), but rather show a clear distaste for it, thus being more in line with findings from Yao, Oppewal, and Wang (2020).

The implications of these results are many. For one, firms need to carefully consider possible negative consequences before engaging in shrinkflation, as not only do consumers react negatively towards the specific product but also the brand, implying there might be wider consequences for the brand as a whole resulting from a single product being downsized. As it remains unclear in the current literature whether shrinkflation lowers actual demand (i.e., if behavioral intentions lead to actual behavior), the effects on product and brand behavioral intentions may have different outcomes. In the worst-case scenario, shrinkflation lowers demand (i.e., negatively impacts sales), thus following the findings made by Wilkins and Ireland (2020). In the best-case scenario, shrinkflation “only” lowers intentions without a corresponding change in purchase behavior, thus following Lee’s (2022) findings.

Nevertheless, in both scenarios the downsizing firm’s brand trust and credibility will suffer, likely having long-term effects on a firm’s brand equity. Furthermore, the results indicate that awareness increases in inflationary times, implying that firms may want to reconsider employing this tactic when the economy is suffering. Seeing how large institutions around Europe (e.g. the EU and French Government) are discussing implementing regulations aimed towards, for instance, disclosing shrinkflation occurrence, awareness is likely to increase in the future as consumers would no longer have to visually estimate package size changes nor evaluate pricing information to notice shrinkflation. If regulations such as these happen, then firms should consider abandoning shrinkflation practices altogether, as price increases would

then become the sneaker practice in this scenario, as it would still require customers to evaluate pricing information. Regulations have yet to be implemented, but firms should monitor possible developments.

For academia, these results fill the gap on downstream effects for products and brands resulting from shrinkflation in the context of inflation, confirming some of the downstream effects previously researched (i.e., purchase and WOM intentions as per Wilkins, Beckenuyte, and Butt, 2016). Furthermore, we extend Meeker's (2021) and Kachersky's (2011) findings by not only confirming that shrinkflation leads to negative reactions and lowered purchase intention but also that it simultaneously affects offer satisfaction and WOM intentions for both product and brand. Lastly, we add to the shrinkflation literature by examining a different product category (liquid laundry detergents) than those previously examined, building on the cumulative body of work as there may be differences in effects between product categories as highlighted by Çakır and Balagtas (2014). Considering that FMCG firms generally respond to cost increases by examining price and package size, future research could focus on comparing and contrasting these in the context of inflation, broadening the findings of this thesis. Such research would not only provide important contributions to shrinkflation literature but also help firms in their choice of inflation-coping tactics, given that price and package size are the two main decision variables.

6.3 Shrinkflation Levels

Interestingly, the results show that higher levels of shrinkflation do not necessarily lead to worse product and brand behavioral intentions than lower levels of shrinkflation. The results, therefore, do not show support for H1c. This could be an indication that, in the scope of shrinkflation levels tested in this study (10-20%), the actual level is of lesser importance. This

further suggests that shrinkflation alone is enough for consumers to react negatively, regardless of what level of shrinkflation a firm deploys. This implies that consumers' feelings of having been deceived are equal between different levels of shrinkflation. In turn, firms, if they decide to downsize despite its negative effects on behavioral intentions, might as well deploy a higher shrinkflation level to further increase profit margins. However, since the results indicate a general pattern that supports the existing literature, it is not impossible that with a larger sample size, we could expect significant results. If this turns out true, then firms must exercise caution not only when product downsizing, but also when choosing the shrinkflation level, as higher levels might increase consumers' perceived persuasive intent as per Kachersky (2011) and cognitive dissonance as per Wilkins, Beckenuyte, and Butt (2016), ultimately having stronger negative effects on product and brand behavioral intentions. However, our findings are not able to support this notion at a statistically significant level.

This thesis is, to our knowledge, the first to examine the differences in effects on behavioral intentions based on different levels of shrinkflation. As such, we are contributing valuable insight to fill this gap, although further research is needed to determine if the pattern observed holds with a larger sample size, as this would have practical implications for firms. Additionally, although shrinkflation levels were chosen based on what is common in practice, future research could explore even higher levels to determine at what point consumers deem the level to be too high or outright refuse to purchase the product.

6.4 Offer Fairness, Brand Trust, and Credibility

The results show that when customers are exposed to shrinkflation, they perceive the offer as unfair, ultimately leading to lower product and brand behavioral intentions. Furthermore, they show that when customers are exposed to shrinkflation, their trust in the brand is damaged

and they find it less credible, leading to lower product and brand behavioral intentions. Thus, the results provide empirical support for H2; offer fairness, brand trust, and brand credibility mediate the effects between shrinkflation and product and brand behavioral intentions. The results are as expected, as they follow the research presented in the literature review. For instance, the results support the notion that shrinkflation is perceived as a violation of trust by consumers (Gupta et al., 2006), is negatively related to perceptions of fairness among consumers (Evangelidis, 2023), as well as consumers' trust in the brand (Dekimpe and Van Heerde, 2023). Seeing how lowered perceived fairness, brand trust, and brand credibility are all linked to feelings of deception when exposed to shrinkflation, the results show clear support for the notion that customers do not want to patronize a product or brand that is trying to deceive them.

Considering how unfairness perceptions are lowered if the downsizing brand simply informs its customers that shrinkflation is occurring (Evangelidis, 2023), firms might have an incentive to communicate shrinkflation occurrence. Although shrinkflation may be preferred over price increases in instances where price increases impact sales more negatively than decreases in package size (Çakır and Balagtas, 2014), communicating shrinkflation goes against the very nature of this tactic as it would no longer represent a hidden price increase. In light of the aforementioned indication of increased shrinkflation awareness in inflationary times, firms should reconsider the attractiveness of the tactic in this context. Not only do the results indicate an increased difficulty for firms to get away with uncommunicated shrinkflation during inflationary times, but also that communicated shrinkflation would effectively eliminate this tactic's advantages over price increases as the indirect increase in price that aims to exploit consumer inattention would no longer exist. Furthermore, the results show that perceptions of fairness, brand trust, and brand credibility play a bigger role

than previous shrinkflation literature has indicated, implying a need for firms to consider the wider negative implications before engaging in shrinkflation. That is, not only will the product and brand behavioral intentions be negatively affected by shrinkflation, potentially affecting sales, but also consumers' perceptions of fairness, brand trust, and brand credibility.

While previous literature has proved the link between shrinkflation and fairness perceptions (Evangelidis, 2023), shrinkflation and brand trust (Dekimpe and Van Heerde, 2023), and brand credibility and purchase intentions (Calvo-Porrall and Lang, 2015), this thesis is, to our knowledge, the first study to establish these mediating links that exist between shrinkflation and behavioral intentions for both the product and brand. First, shrinkflation not only lowers perceptions of fairness, capturing an important attitude towards a firm's action, but also subsequently affects product and brand behavioral intentions. Thus, our findings extend the existing shrinkflation literature examining fairness perceptions by also linking it to behavioral intentions. Second, shrinkflation not only affects brand trust negatively but also consequently affects behavioral intentions. This indicates support for the notion that brand trust and brand equity are intrinsically linked despite brand trust not explicitly being part of it (Delgado-Ballester and Munuera-Alemán, 2005), therefore extending Dam's (2022) findings by showing these hold also in a Western setting in the context of shrinkflation. Lastly, we find that shrinkflation negatively affects brand credibility, in turn having negative effects on behavioral intentions. Thus, these results provide support for the notion that customers perceive an implicit promise as having been broken by the firm that uses this tactic. Furthermore, although intentions are an important predictor of behavior, future research should establish if there is a direct link between these in the context of shrinkflation, as it would help predict potential implications of lowered product and brand behavioral intentions on businesses.

6.5 NBs vs. PLs

H3 supposed that the negative effects of shrinkflation on behavioral intentions would be moderated by brand type, with NBs having worse outcomes than PLs. The results provide full support for this hypothesis, with empirical findings in favor of a moderating effect in which shrinkflation causes stronger effects for NBs, leading to decreased product and brand behavioral intentions. Furthermore, the moderated mediation analyses provided results that indicate when NBs engage in shrinkflation, there is a stronger effect on brand trust and brand credibility than when PLs engage in shrinkflation. Interestingly, the effect of shrinkflation on offer fairness was similar for both brand types.

These results are unsurprising, as they are in line with existing theory. Not only was the predicted moderation effect supported, but there was also support for moderation mediation with the exception of offer fairness. Thus, although perceived offer fairness is affected similarly by shrinkflation regardless of brand type, brand trust and brand credibility are more affected by NBs engaging in shrinkflation than by PLs, leading to worse product and brand behavioral intentions for NBs. This indicates support for the notion that customers have higher expectations of NBs than PLs, and therefore react stronger when an NB product downsizes compared to when a PL does. Given that PLs typically have lower brand equity and prices compared to NBs, yet brand type does not significantly affect perceptions of offer fairness, it suggests that customers' feelings of deception when encountering shrinkflation are primarily associated with the tactic itself. That is, regardless of the brand type (with inherent differences in price and quality perceptions, etc.) consumers dislike shrinkflation as a practice and will therefore have perceptions of unfairness when exposed to it. However, considering how brand trust and brand credibility are more affected when NBs use product downsizing than when PLs do implies that NBs' comparatively higher brand equity and price is what

leads customers to expect more from these. Given NBs' quality edge in consumers' minds due to higher advertising capacity, knowledge among non-users, and price premium, it is unsurprising that customers expect not only the product itself to be of a higher standard, but also that the inflation-coping tactics the brand deploys are as well. This sentiment is further strengthened seeing how research suggests (Yao, Oppewal, and Wang, 2020) that high-quality brands are less sensitive to the negative effects of price increases, implying that consumers will be more forgiving towards NBs if using inflation-coping tactics that aim not to deceive them.

Furthermore, considering how PLs generally have lower brand equity and are cheaper than NBs, the results indicate support for the notion that consumers expect less from these brands, implying they perceive less cognitive dissonance when evaluating downsized products from a PL compared to an NB. In turn, this indicates that PLs have a better opportunity to use this tactic compared to NBs, especially seeing how research suggests (Lamey et al., 2007) that customers trade off perceived quality for price in inflationary periods where, even if PLs engage in shrinkflation, the new price per liter is likely still more tolerable than that of NBs. These findings indicate important implications for firms in that NBs need to be more cautious than PLs when engaging in shrinkflation as PLs seem to have more leniency and freedom to use this tactic than NBs do without significantly worse customer reactions.

To our knowledge, this is the first study to explore the differences in effects on behavioral intentions between NBs and PLs in the context of shrinkflation and inflation. Support of moderation and moderated mediation for brand trust and brand credibility represent a significant contribution to shrinkflation literature and serve as a starting point for further research seeing how numerous papers have highlighted a need for research on this (Alić,

Činjarević, and Agić, 2020; Dekimpe and Van Heerde, 2023; Yao, Oppewal, and Wang, 2020). The identified differences in effects between NBs and PLs may vary for other product categories. Therefore, future research may focus on other product categories to gain new insights and build on the cumulative body of work. Additionally, future research could examine product categories where the relative price difference between NBs and PLs is closer to one another, where price as a signal of superior quality is lower, providing an interesting avenue to explore if differences in effects between brand types still hold. For instance, if differences in effects between NBs and PLs are lower for other categories where the relative price difference is lower, then that would have important implications for firms in that there may be categories where shrinkflation practices suit better than others.

6.6 Inflation Impact

H4 proposed that customers who feel more financially impacted by inflation would be more greatly affected by shrinkflation compared to those less impacted. Interestingly, our results show a lack of significance in the moderating effect of inflation impact. However, they also showed a pattern with tendencies in line with the hypothesis whereby customers more greatly impacted by inflation had worse reactions to shrinkflation than those less impacted. We, therefore, conclude that partial support exists for H4. Interestingly, the results from moderated mediation testing found a significant effect for the mediator, brand trust, meaning that shrinkflation has a stronger negative effect on brand trust for those that are more greatly impacted by inflation, leading to worse behavioral intentions.

Although the link between inflation impact and brand trust was not a focus of this thesis but rather served as a robustness check, it could form the basis for future research. Considering

that the high inflation-impact group fears their financial situation getting worse, it is probable that they not only feel deceived by shrinkflation as a practice but also by its timing. If true, it suggests that trusted brands should avoid deceptive practices like shrinkflation, particularly during inflationary times when consumers face financial strain.

Although the moderation results do not show support for H4, the differences in effects between the groups are, at least partially, supported. For the low inflation-impact group, shrinkflation does not significantly affect customers' product and brand behavioral intentions, while it does for the high inflation-impact group. As the low inflation-impact group feels less financially impacted by inflation, it seems probable that their price sensitivity is lower compared to the high inflation-impact group when exposed to shrinkflation. In turn, this implies that package size decreases are less likely to affect their decisions, as they feel less financially restricted by inflation, meaning they have less incentive to shift to a lower-priced brand compared to those who feel more financially impacted by inflation. However, as the results show a pattern of lowered product and brand behavioral intentions for the low inflation-impact group too, they might still change their preferred brand to one that has not product downsized due to a distaste for the practice itself rather than for financial reasons.

Furthermore, as the negative effects between shrinkflation and product and brand behavioral intentions were significant for the high inflation-impact group, we found partial support for H4 as this group displayed stronger reactions to shrinkflation than the low inflation-impact group. Thus, shrinkflation is likely to affect the high inflation-impact group's choice of preferred product and brand as they not only dislike the tactic of shrinkflation but also feel more financially restricted by inflation, creating an incentive to shift to lower-priced brands. Therefore, for the high inflation-impact group, the results indicate support for the notion that

inflation impacts consumers' price sensitivity (D'Acunto, Malmendier, and Weber, 2023) leading to stronger negative reactions when exposed to shrinkflation.

The results indicate some practical implications. For instance, considering how a large majority of our sample (70%) perceive themselves as belonging to the high inflation-impact group, and inflation is the top concern for the majority (53%) of European consumers (Bazzoni et al., 2022), it seems likely that the majority of customers perceive high inflation-impact in practice as well. Because we found partial support for H4 for the high inflation-impact group, firms need to exercise caution when product downsizing in inflationary times, as the negative effects of shrinkflation on product and brand behavioral intentions are likely amplified for the majority due to increased price sensitivity and inflation expectations.

Furthermore, firms should consider their customer base in relation to their brand before deciding on shrinkflation in inflationary times. For example, lower-priced brands may have a better opportunity to maintain or even increase revenue during periods of inflation, even when deploying product downsizing. While customers of these brands are typically price-conscious individuals even in stable economic conditions, they may find it more challenging to find a cheaper alternative during inflationary times. This situation can effectively retain customers despite their dissatisfaction with the downsizing strategy.

Conversely, assuming a premium brand's customer base mainly comprises more affluent customers who are less affected by inflation, then shrinkflation seems unlikely to significantly decrease their behavioral intentions or prompt them to switch brands. This is supported by the non-significant results observed in the low inflation-impact group. Thus, it

seems probable that it is the mid-tier brands (in terms of perceived quality and price) that are most exposed to potential negative effects of shrinkflation on product and brand behavioral intentions, as the customers have many alternatives to choose from, whether it be cheaper alternatives or other mid-tier brands who are not engaging in shrinkflation. Of course, this is assuming a more diverse customer base exists between the premium and budget brands, and will surely look different in practice and between different product categories. Nonetheless, the results indicate the importance for firms to be aware of their customer base, as customers who feel less financially impacted by inflation may be more forgiving towards shrinkflation than those that feel more financially impacted by it. Given that a majority of customers do feel financially impacted by inflation, firms should expect a drop in product and brand behavioral intentions if deploying shrinkflation for at least a proportion of their customer base, which may differ between brands.

The results provide important contributions to shrinkflation literature, as although moderation is not fully supported, we identify tendencies that are in line with the hypothesis, namely that there exist significant differences between high inflation-impact groups when exposed to shrinkflation versus when they are not. Further research is needed as perceived inflation-impact in relation to shrinkflation may have different effects on product and brand behavioral intentions for different product types. For instance, it is not unlikely that other FMCG categories, such as beverages or processed foods, might produce different results as these are items with different price ranges, wider range of alternatives, etcetera. Future research could also benefit from measuring inflation impact on a larger scale and focusing on different aspects. Nonetheless, this thesis contributes by being, to our knowledge, the first to relate perceived inflation impact to shrinkflation and behavioral intentions, adding to the

limited shrinkflation literature looking at the phenomenon in inflationary times which future research can add to.

6.7 Shrinkflation Knowledge

H5 posited that customers with less knowledge of shrinkflation would have less pronounced negative effects on intentions when exposed to shrinkflation than customers with higher levels of knowledge. However, the results obtained from this study found that there were no notable differences between these customers, and they both have similarly negative reactions when exposed to shrinkflation.

The results were surprising as they contradict the predicted effects hypothesized in the literature review. Although media and institutional attention on the topic of shrinkflation is increasing, consumer knowledge about the topic does not moderate the effect between shrinkflation and behavioral intentions. In turn, this may indicate that consumers do not necessarily need to know what shrinkflation is nor its underlying intent; they simply dislike it, whether it be instinctively or due to prior knowledge about the tactic. These findings have implications for firms, suggesting that negative media attention may not be a major concern, as customers tend to disapprove of shrinkflation regardless of their level of knowledge. Consequently, firms engaging in shrinkflation need not invest significant effort in mitigating perceived negative effects if a backlash occurs. While it may seem prudent for a firm facing backlash to engage in damage control, such as by explaining the necessity of downsizing, the results indicate that these efforts are unlikely to influence customers' product and brand behavioral intentions but may rather waste a firm's time and resources.

Several factors could explain the lack of support for our hypothesis. On one hand, increased knowledge of shrinkflation might lead customers to dislike it more because they recognize the tactic's deceptive intent and understand that firms are trying to mislead them, aligning with the hypothesis. On the other hand, customers with greater awareness of shrinkflation may respond less emotionally, understanding that shrinkflation often stems from increased costs for firms and a need to manage expenses. They may perceive shrinkflation as an alternative to direct price increases, both of which result in the same margin increase, whether direct or indirect. If these two perspectives are simultaneously at play, they could neutralize each other, potentially explaining why the hypothesis was not supported. Nonetheless, these are only speculative explanations, and future research could investigate this further.

Furthermore, given that customers are increasingly worried about shrinkflation, likely due to increasing media attention on the topic, it seems probable that although knowledge does not amplify the effects on behavioral intentions, customers are more likely to notice shrinkflation at the time of purchase and, that way, amplify the negative effects on intentions (as supported in H1b). This link was not studied and could therefore be a topic for future research, as it would contribute to the shrinkflation literature and provide important implications for firms in how to interpret the potential negative impacts of increasing consumer knowledge about shrinkflation.

6.8 Simplified Model

Figure 3 provides an updated, simplified framework of our supported findings:

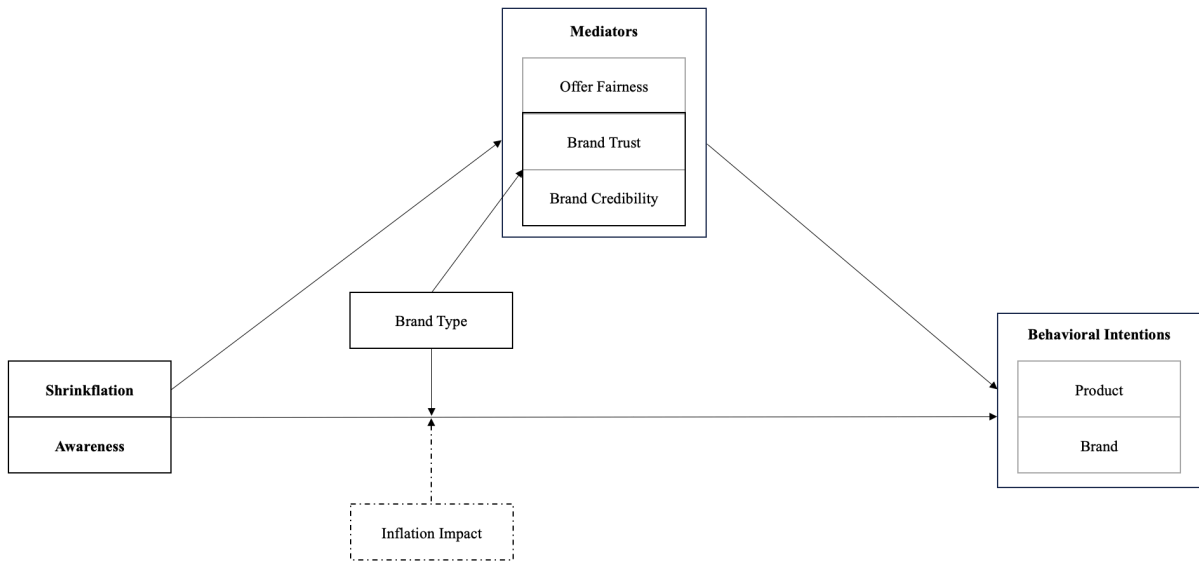


Figure 3. Simplified Theoretical Model

7. Conclusion

Shrinkflation has become a prevalent tactic used by FMCG companies seeking to maintain profit margins amid rising costs, even more so in our post-Covid society that has been plagued by high inflation. However, even with shrinkflation having been an established strategy for decades, research into shrinkflation and its effects has remained miniscule.

This thesis aimed to fill this gap by answering several research questions, the first of which was whether shrinkflation affects consumer intentions. We contributed to research by expanding on the downstream effects of shrinkflation, with variables relating to both product and brand behavioral intentions which comprised not only purchase intentions but also WOM intentions and satisfaction. Our study finds that behavioral intentions are indeed negatively affected by shrinkflation, with awareness leading to even more pronounced effects.

We also sought to understand whether different shrinkflation levels would produce differing effects. While the hypothesis related to this research question was rejected, the results were in line with our supposition that higher shrinkflation levels would lead to worse intentions, indicating a need for caution when determining how far to go when downsizing products. These findings contribute to the limited body of research into shrinkflation by being the first study to examine effects at different levels of shrinkflation, and they provide valuable considerations for firms who will undoubtedly face decisions about how much to downsize when shrinkflation is the chosen tactic.

Because of the rising prevalence and power of PLs in many markets, we also wanted to learn whether shrinkflation leads to differing effects for NBs and PLs. We suspected that NBs would face greater scrutiny due to higher brand familiarity, brand equity, and higher

expectations that arise from these aspects, and we found that this was, indeed, the case. Our results showed that when NBs engage in shrinkflation, there is a significant impact on their customers' intentions, while the same cannot be said for PLs. Furthermore, NBs that use shrinkflation can expect negative effects on both their brand trust and credibility. These results answer specific calls for research into effects of different brand types and provide valuable guidance for brand owners. While PLs currently enjoy a certain amount of freedom in their ability to engage in shrinkflation, the same cannot be said for NBs, and they would be wise to exercise caution when using this tactic.

Answering a call for more marketing research during inflationary times, we also sought to learn if shrinkflation would lead to differing effects depending on a customer's perceived financial impact from inflation. While moderation was not empirically supported, our results showed a pattern with tendencies towards the notion that customers perceiving themselves to be more impacted by inflation have worse intentions when exposed to shrinkflation than those who feel less impacted. Furthermore, shrinkflation has a greater impact on brand trust for those who feel more impacted by inflation. Because this research has been conducted during an inflationary period, the results are valuable for understanding consumers' mindsets and reactions during particularly difficult times. The results provide considerations for firms depending on the types of products they are selling (Low involvement/cost vs. high involvement/cost) and their predominant customer base (low income/more price sensitive vs. high income/less price sensitive).

Finally, our research aimed to investigate whether shrinkflation exposure would lead to differing effects based on how much previous knowledge customers possess about shrinkflation. Shrinkflation has become a popular topic in the media, and awareness is

increasing. However, our results found that when shrinkflation occurs, there are no differences in behavioral intentions between consumers with more or less knowledge. These results contribute to the under-researched area of shrinkflation and can provide some relief for firms. Although discussions about shrinkflation are frequent, and consumers will undoubtedly become more familiar with it as time goes on, a higher level of knowledge does not seem to lead to worse intentions. Perhaps less encouraging is that consumers strongly dislike shrinkflation regardless of their knowledge about it, but the decision whether or not to engage in shrinkflation is at least in the control of firms.

7.1 Limitations

While this thesis has contributed to the limited body of knowledge surrounding shrinkflation and marketing in inflationary times, several limitations within our research must be acknowledged.

For instance, one of our research questions aimed to understand potential differences in effects that arise from different shrinkflation levels, and as such, our experimental treatments featured different amounts of shrinkflation. This led to imbalances in our sample sizes when the shrinkflation groups were later combined. While the size differences were accounted for in the analyses, our results likely would have been strengthened with larger groups that were of similar sizes.

As with any research study, our results should also be considered in their context, and it is possible they might not translate in all situations. For instance, this research focused specifically on FMCGs, and our survey captured responses for liquid laundry detergents in the Swedish market. While our results are likely generalizable across many other categories

in similar markets, they might not hold for very different products or in less mature PL markets. Furthermore, we sought to understand the effects of shrinkflation during a period of high inflation. Naturally, the results obtained could be from particularly sensitive consumers, and the results might not be applicable during times of economic prosperity when price sensitivity is lower or when companies are not downsizing products as much or as often as they currently are.

Finally, as our experimental study was conducted via an online survey, a degree of artificiality was introduced, and real-world intentions and behaviors might differ. For instance, before being exposed to the treatments, participants were asked to examine the laundry detergent carefully, and they were free from normal distractions that would be present in a retail setting. Thus, we would imagine that less shrinkflation awareness would exist in practice. In addition, we altered the experiment treatments to feature laundry detergents of the same size and price (by brand type). In reality, there are differences in these aspects that make it very challenging for consumers to easily compare, meaning that shrinkflation is even more difficult to detect.

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Appendix

A: Table 2

Table 2. Liquid Laundry Detergent Sales by Brand

Brand Type	Brand	Manufacturer	Sales Units	Sales Value in SEK
<i>Total Sweden Liquid Laundry Detergent</i>			13,183,466	561,029,961
<i>NB</i>	A+	BlueSun	3,744,923	180,575,460
<i>NB</i>	Grumme	Orkla	3,396,768	117,927,802
<i>PL</i>	ICA Skona	ICA Gruppen	2,183,289	68,667,211
<i>NB</i>	Via	Unilever	1,867,990	99,224,784
<i>NB</i>	Neutral	Unilever	456,123	26,281,195
<i>PL</i>	Änglamark	Kooperativa Förbundet	241,123	10,409,965
<i>PL</i>	Fixa	Axfood	167,487	6,078,500
<i>PL</i>	ICA Basic	ICA Gruppen	40,271	831,216
<i>PL</i>	Coop	Kooperativa Förbundet	39,379	1,777,880
<i>NB</i>	Dreft	BlueSun	28,432	1,111,241

Source: NielsenIQ. Sweden laundry detergent sales by brand, 2023.

B: Pre-Study Pictures

Via



A+



Neutral



Grumme



Dreft



Coop



ICA Basic



ICA Skona



Änglamark



Fixa



C: Pre-Study Survey

[Welcome message]

Welcome!

We are two students from Stockholm School of Economics conducting research for our Master thesis. The survey is anonymous and follows GDPR guidelines and is for Swedish residents. No personal data will be collected, and the data will be deleted June 1st.

This survey will take approximately 2-3 minutes to complete. If you have any questions, please feel free to email us at 50669@student.hhs.se!

Thank you,

Lucas Wikström & Andi Jernberg

By selecting "I consent" you acknowledge the above text and agree to continue.

- I consent

[Intro Text] In the following survey, you will be shown pictures of different laundry detergent products from different brands. We are interested in whether you believe the laundry detergent brands are National Brands or Private Labels.

A National Brand is one which is often produced by an FMCG (fast moving consumer goods) company and is distributed to, and sold by, a wide range of retailers across the country.

A Private Label brand is one which is produced, controlled, and sold by a specific retailer.

Control_1_location

- In what country do you currently reside? [Skip to end of survey if Sweden not selected]
 - Sweden
 - The United States
 - The United Kingdom
 - Other

[Brand detergents presented in random order]

- The brand is a:
 - National Brand
 - Private Label

Control_2

- What were the products pictured in the survey?
 - Bread
 - Laundry detergent
 - Dishwashing liquid
 - Toilet paper

Control_3

- What was this survey about?
 - Online shopping
 - Knockoff products
 - National Brands and Private Labels
 - Laundry detergent preferences

Age

- What is your age?
 - [fill in the blank]

Gender

- What is your gender?
 - Male
 - Female
 - Non-Binary / Other gender

D: Main Study Treatment Pictures

Via

No Shrinkflation



10% Shrinkflation



15% Shrinkflation



20% Shrinkflation



A+

No Shrinkflation



10% Shrinkflation



15% Shrinkflation



20% Shrinkflation



Coop

No Shrinkflation



10% Shrinkflation



15% Shrinkflation



20% Shrinkflation



ICA Basic

No Shrinkflation



10% Shrinkflation



15% Shrinkflation



20% Shrinkflation



E: Main Study Survey

[Welcome message]

Welcome!

We are two students from Stockholm School of Economics conducting research for our Master thesis. This survey will take approximately 10 minutes to complete.

Please follow the instructions carefully and answer to the best of your ability. The survey is anonymous and follows GDPR guidelines and is for **Swedish residents**. If you have any questions, please feel free to email us at 50669@student.hhs.se!

Thank you,

Lucas Wikström & Andi Jernberg

GDPR Information

No personal data will be collected during this survey. Your responses in the survey are confidential and will only be made available to supervisors, tutors, and course directors. All data will be stored and processed safely by SSE, and the data will be permanently deleted on June 1st. Our thesis will not contain any information that could identify you as a participant of the survey. If you would like more information, please visit <https://www.hhs.se/gdpr>.

By selecting "I consent" you acknowledge the above text and agree to continue.

- I consent

Control_1_location

- In what country do you currently reside? [Skip to end of survey if Sweden not selected]
 - Sweden
 - The United States
 - The United Kingdom
 - Other

[Intro Text] In the following survey you will be presented with two scenarios and asked a series of questions. Please pay careful attention and take your time reading the instructions. Attention checks will be performed throughout the survey.

[Scenario 1]

Imagine you are on the way home and plan to stop by the grocery store to buy some things for dinner with friends later. Your friend calls you and asks if you could also buy them some laundry detergent while you are there. They send you the information about which brand and size they need, and say they will pay you back later tonight when you see each other.

You agree and see the detergent they have asked for. Please examine the laundry detergent carefully.

[Picture of control laundry detergent from Brand X]

You buy the detergent and give it to your friend later at dinner.

Imagine that a few weeks after you have bought the laundry detergent for your friend, you need to go to the grocery store again. This time you need to buy laundry detergent for yourself. You browse the options in the store and remember the detergent that your friend had asked for and decide to take a second look. Please examine the laundry detergent carefully.

[Picture of laundry detergent at No shrinkflation, 10% shrinkflation, 15% shrinkflation, or 20% shrinkflation from Brand X]

[Intro text to questions] Now that you have seen the laundry detergent, you will be asked a series of questions. Please read the questions carefully and answer them to the best of your ability. Attention checks will be performed throughout the survey.

Awareness_Shrinkflation

- Did the laundry detergent change between trips?
 - Yes
 - No

Purchase_Inten_product

- After seeing the laundry detergent during the second shopping trip, please indicate the probability of each of the actions regarding the **product**. (1 = very low, 7 = very high)
 - If I were going to buy laundry detergent, the probability of buying this product is...
 - The probability I would consider buying this product is...
 - The likelihood that I would purchase this product is...

Purchase_Inten_brand

- After seeing the laundry detergent during the second shopping trip, please indicate the probability of each of the actions regarding the **brand**. (1 = very low, 7 = very high)
 - If I were going to buy laundry detergent, the probability of buying this brand is...
 - The probability I would consider buying this brand is...
 - The likelihood that I would purchase this brand is...

Attention_check_1

- Please type the word "orange" in the space below.
 - [Fill in the blank]

WOM_product

- After seeing the laundry detergent during the second shopping trip, please indicate how much you agree or disagree with the following statements about how you would speak about the **laundry detergent**. (1 = strongly disagree, 7 = strongly agree)
 - I would say positive things about the laundry detergent to other people.
 - I would recommend the laundry detergent to someone who seeks my advice.
 - I would encourage friends and relatives to buy this laundry detergent.

WOM_brand

- After seeing the laundry detergent during the second shopping trip, please indicate how much you agree or disagree with the following statements about how you would speak about the **brand**. (1 = strongly disagree, 7 = strongly agree)
 - I would say positive things about the brand to other people.
 - I would recommend the brand to someone who seeks my advice.
 - I would encourage friends and relatives to buy this brand.

Satisfaction_offer

- After seeing the laundry detergent during the second shopping trip, please indicate how much you agree or disagree with the following statements about your satisfaction with the **offer**. (1 = strongly disagree, 7 = strongly agree)
 - I am satisfied with the new offer.
 - I am happy with the new offer.
 - I am delighted with the new offer.

Satisfaction_brand

- After seeing the laundry detergent during the second shopping trip, please indicate how much you agree or disagree with the following statements about your satisfaction with the **brand**. (1 = strongly disagree, 7 = strongly agree)
 - I am satisfied with the laundry detergent brand.
 - I am happy with the laundry detergent brand.
 - I am delighted with the laundry detergent brand.

Attention_check_2

- This question serves as an attention check. Please select the second option below.
 - Not likely at all
 - Somewhat unlikely
 - Neither unlikely or likely
 - Somewhat likely
 - Very likely

Brand_Credibility

- After seeing the laundry detergent during the second trip, do you think the **brand** is...
 - (1= not sincere, 7 = sincere)
 - (1= not an expert, 7 = an expert)
 - (1 = not honest, 7 = honest)
 - (1 = inexperienced, 7 = experienced)

Brand_trust

- After seeing the laundry detergent during the second shopping trip, please indicate how much you agree or disagree with the following statements about the **brand**. (1 = completely disagree, 7 = completely agree)
 - The brand can be relied upon to keep promises.
 - The brand is trustworthy.
 - I have full confidence in the brand.

Offer_fairness

- Please indicate how much you agree or disagree with the following statements about the offer after seeing the laundry detergent in the second shopping trip. (1 = strongly disagree, 7 = strongly agree)
 - The laundry detergent offer is fair
 - The laundry detergent offer is reasonable
 - The laundry detergent offer is acceptable

Shrinkflation_knowledge

- Please indicate your level of familiarity with the concept of Shrinkflation, referring to when a product's volume is decreased while the selling price remains the same. I am..

- (1 = unfamiliar, 7 = familiar)
- (1 = not knowledgeable, 7 = knowledgeable)
- (1 = inexperienced, 7 = experienced)

Inflation_Impact

- Please indicate how much to agree or disagree with the following statements about how inflation has impacted you in recent times. (1 = strongly disagree, 7 = strongly agree)
 - Inflation has made it harder for me to afford things that I regularly purchase
 - Inflation has made it necessary for me to control my budget more tightly
 - Inflation has caused me to change the amount that I buy
 - Inflation has caused me to change the items that I buy

Age

- What is your age?
 - [fill in the blank]

Gender

- What is your gender?
 - Male
 - Female
 - Non-Binary / Other gender

Control_2

- What were the pictures at the beginning of the survey?
 - Dishwashing liquid
 - Laundry detergent
 - Laundry softener

[End text]

Thank you for participating in our survey!

We would like to remind you that any changes you might have seen to the laundry detergent are completely fictitious, and the changes don't necessarily reflect the past or future actions of the presented brand.