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Cautiousness Caps Curiosity: The Influence of Risk on Attitude towards Product Subscription Models

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Product subscription models have grown in popularity among retailers and consumers. We show that risk perception plays a central role in consumers' evaluation of product subscriptions. Contrasting with predefined subscriptions, where contents are known to consumers prior to delivery, surprise subscriptions, where contents are unknown to consumers prior to delivery, carry an inherent risk for consumers to receive unwanted products. Surprise-related research, however, has not yet touched upon surprise as a retailing mechanism. Based on Prospect Theory, we delineate that consumers prefer predefined subscriptions in shorter and surprise subscriptions in longer delivery intervals. The degree of perceived risk thus caps the frequency in which consumers prefer recurring subscription deliveries. We show how retailers can manipulate associated risk through the introduction of a free-return option in order to increase consumers' propensity to select surprise subscriptions in higher frequencies.

Keywords: *Subscriptions; Decision-Making; Preferences;*

Track: *Retailing and Omni-Channel Management*

1 Introduction

Subscription models are an up-and-coming business model that receives increased attention. The recent purchase of One Dollar Shave Club by Unilever for $1B epitomizes the relevance of subscription models. The fact that an ever greater amount of venture capital flows into product subscription models accentuates their relevance. An array of merely 57 startups selling physical products on a recurring base has received $1.4B of funding in total (CB Insights, 2016a). Being applied to an ever increasing scope of categories, subscriptions are steadily becoming more important for retailers. As eCommerce continues to grow, subscriptions can represent a way for retailers to differentiate themselves in this highly competitive market.

An essential part of many such product subscriptions is the element of surprise. While subscriptions exist in convenience-based predefined forms, with box contents known to the consumer prior to delivery, surprise subscriptions appeal to more hedonic motives such as receiving inspiration for new products. Acknowledging the information deficit of a subscription provider regarding consumers' exact consumption preferences, surprise-based retail schemes appear to carry risk-related intricacies for both retailers and consumers.

Most surprise-related research, however, does not address surprise as a retailing mechanism, but as the over- or under-fulfillment of expectations in the moment of consuming a product (Oliver, 1989; Mano & Oliver, 1993; Oliver, Rust, and Varki, 1997). We add to this that surprise-related theories need to be expanded towards using surprise as a manipulation rather than an outcome or dependent variable of consumption processes.

Against this background, the aim of our research is twofold: First, we investigate the interplay between subscription model mechanisms, i.e. predefined vs. surprise, and delivery intervals, i.e. short vs. long, by studying risk-related consumer attitude towards a fictional grocery subscription service. Second, we consider free returns as a way for retailers to manipulate perceived risk in order to improve consumers' attitude towards the offering.

2 Theory

Prospect Theory seems suitable to analyze the mechanisms of subscription models, because it taps into both positive and negative assumptions about an offering by revealing people's propensity to seek benefits and to avoid losses (Kahneman and Tversky, 1979; Crowe and Higgins, 1997). In the case of product subscriptions, consumers could potentially avoid pain by saving on transaction costs, when sparing tours to the supermarket for periodically purchased products. Consumers could obtain benefits from a product subscription, if they were to extract an added value. This could be achieved by deriving inspiration from a surprise subscription.

While Prospect Theory has so far been concerned with ad-hoc decisions and immediate outcomes, our study adds onto Tversky and Kahneman's remark that "decision weights may be sensitive to (…) the spacing and the level of outcomes" (1992, p. 317). Consequently, we posit that preferences regarding product subscriptions react to delivery time intervals, because framing variations regarding gains or losses lead to inherently distinctive preferences (Tversky and Kahnemann, 1989). We see the concept of loss aversion at the core of our analysis, since people are more sensible towards losses than towards gains (Kahneman & Tversky, 1984). Trying to prevent the frequency of small losses through unwanted products, we assume that consumers prefer surprise subscriptions in longer intervals than predefined subscriptions.

H1. Predefined (surprise) subscriptions are preferred in shorter (longer) delivery intervals.

We postulate that strong habits weaken the above interaction. Liu-Thompkins & Tam (2013) define habits "as a behavioral disposition that is exercised frequently" (p. 22). According to Breivik and Thorbjømsen (2008), habits are expressed through high purchase frequencies. We therefore hypothesize that the existence of strong purchasing habits weakens the interaction between subscription mechanism and delivery interval.

H2. High habits weaken the interaction between subscription mechanism and delivery interval.

We propose that the ability to control the content of a subscription influences risk perception. According to Heath and Tversky (1991) people view everything unknown as riskier per se. We therefore expect surprise subscriptions to be perceived riskier than predefined ones. This perception of risk mediates the pertaining attitude towards the offering. Accordingly, we conclude that an option to return unwanted items abolishes the mediated moderation by risk.

H3. Risk perception mediates the interaction effect on attitude towards the offering.
H4. An option for free returns abolishes the interaction effect between mechanism and interval.

3 Study One: Identifying the process of evaluating product subscription offerings

In this study, we aimed at verifying the proposed interaction between subscription mechanism and delivery interval as well as the influence of habits and risk on attitude towards the offering.

3.1 Participants and procedure

We conducted an online-based experiment targeting respondents from the USA (MTurk). 208 respondents participated in the survey. We excluded the answers of respondents who failed to answer the instructional manipulation check correctly (N=4), leaving a sample of 204 respondents. 53 percent of respondents were male and between 18 and 71 years old (mean= 35).

To investigate the hypothesized interaction, we used a 2 (subscription mechanism: predefined vs. surprise) x 2 (delivery interval: low vs. high) between-subjects design, crossed with a continuous measure for strength of habits. Participants were randomly assigned to one of the groups. The predefined condition showed an ad for a grocery subscription, where consumers chose the items prior to delivery. The surprise condition showed an ad, where consumers received surprise subscriptions with items that fit their general preferences. Each condition existed with either weekly or bi-weekly delivery, maintaining the amount of contents and the monthly subscription fee ($59) stable. Participants then filled out a questionnaire including measures for attitude towards the offering, risk, habits, shopping frequency and apathy.

3.2 Construct measurement

We used reliable multi-item measures to capture the constructs under scrutiny. Overall attitude towards the offering was assessed through a six-item scale from Dimofte et al. (2003, p. 12, α=.97) and was measured on a seven-point Likert semantic differential with word pairs, such as "*Not at all appealing – appealing*". Risk was measured via a scale adapted from Cox and Cox

(2001) with five seven-point Likert scale items (α=.94) ranging from "*fully agree*" to "*fully disagree*", such as "*Getting a grocery subscription is risky*". We measured shopping habits (α=.73) based on the scale developed by Sproles and Kendall (1986), e.g. "*I have favorite brands I buy over and over*". In order to isolate the outcomes of our study from the product category chosen, we wanted to control for both the frequency of and apathy towards grocery shopping. We measured the former through a seven-point Likert scale indication of the frequency of grocery shopping and the latter via a four-item scale (α=.87) by Magi (2003), e.g. "*I want to spend as little effort as possible on grocery shopping*".

3.3 Results and discussion

The strength of the interaction between subscription mechanism and delivery interval depended on the degree of shopping habits. While the interaction was strong for consumers with low habits ($F(1,194)=9.16$, $p<.01$) and regular habits ($F(1,194)=8.74$, $p<.01$), it was not significant when habits were high ($F(1,194)=1.23$, $p=.27$, n.s.). The preference for longer delivery intervals in the surprise condition ($F(1,194)=4.57$, $M_{ShortInterval}=4.49$, $M_{LongInterval}=5.62$, $p<.05$) as well as the preference for shorter delivery intervals in the predefined condition ($F(1,194)=4.74$, $M_{ShortInterval}=5.23$, $M_{LongInterval}=4.36$, $p<.05$) were strongly significant for consumers with low habits. The above delineations yielded evidence for H1 and H2.

We found perceived risk to be a mediated moderator in terms of generating the preferences shown above. Mediating the process, perceived risk had a major indirect effect on attitude towards the offering (95% CI=[-.26, -.02], p=.06). Regarding its direct effect, risk led to a significant reduction of positive attitude towards the offering (95% CI=[-.59, -.34], p<.001). This supported H3.

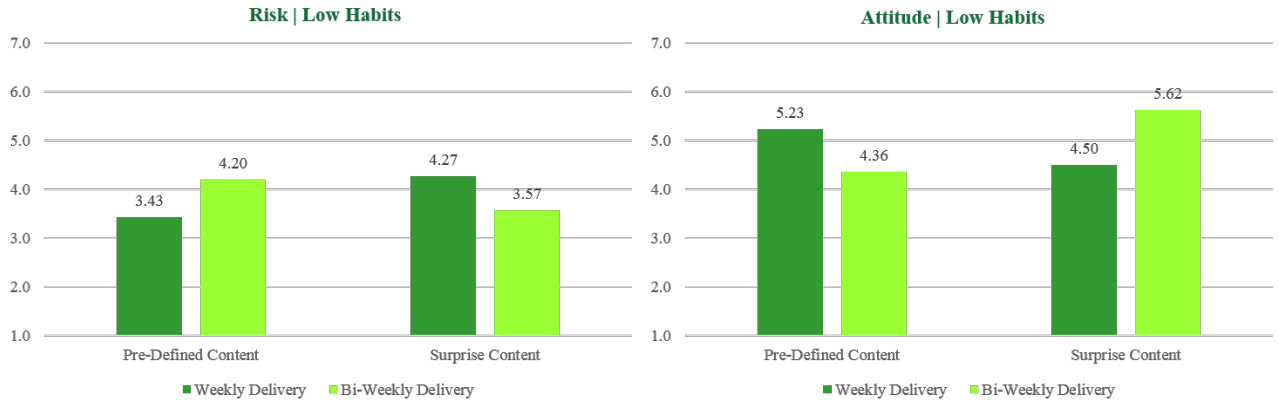


Figure 1: Risk as a mediated moderator of attitude towards the offering

4 Study Two: Manipulating risk to influence attitude towards the offering

Since we found preliminary evidence that risk drives attitude towards the offering, we manipulated risk by introducing a free-return option. We sought to reveal ways for retailers to steer consumers' preferences regarding the interaction between subscription mechanisms and intervals.

4.1 Participants and procedure

We ran our second experiment online (MTurk) and recruited 207 respondents. 54 percent of respondents were male and between 20 and 74 years old (mean=34). We calculated our statistics using only those that passed our manipulation check: participants had to indicate correctly whether their offering included returns or not. This left a sample of 134 people. In addition to reapplying the four conditions of our first study, we introduced four further stimuli to this experiment. The four stimuli of the first experiment were showcased either with or without a free-returns option.

4.2 Construct measurement

Enabling consistency, we kept the dependent variable identical and referred to the scale on attitude towards the offering (α=.97) by Dimofte et al. (2003). To increase the predictive power of our analysis, we controlled for the propensity towards excessive buying by applying the spendthrift/tightwad scale (α=.59) by Rick, Cryder, and Loewenstein (2008) and for the propensity towards novelty (α=.92) by adapting the scale by Steenkamp and Baumgartner (1995). We measured the former via participants' agreement with the following two items on a seven-point Likert scale with options "*strongly disagree*" and "*strongly agree*": "*I have trouble limiting my spending*" and "*I have trouble spending money*". We aggregated the latter via six items, such as "*I like to continue doing the same old things rather than trying new and different things*".

4.3 Results and discussion

We successfully replicated the interaction effect found in the first experiment within the no-return condition (90% CI=[.02, .48], p=.07). Additionally, preferences for long delivery intervals in the surprise condition turned out as hypothesized ($F(1,124)=3.98$, $M_{ShortInterval}=3.87$, $M_{LongInterval}=5.07$, $p<.05$). The introduction of a return option, however, nullified this effect ($F(1,124)=0.31$, $M_{ShortInterval}=5.19$, $M_{LongInterval}=5.01$ p=.58, n.s.). This supported H4.

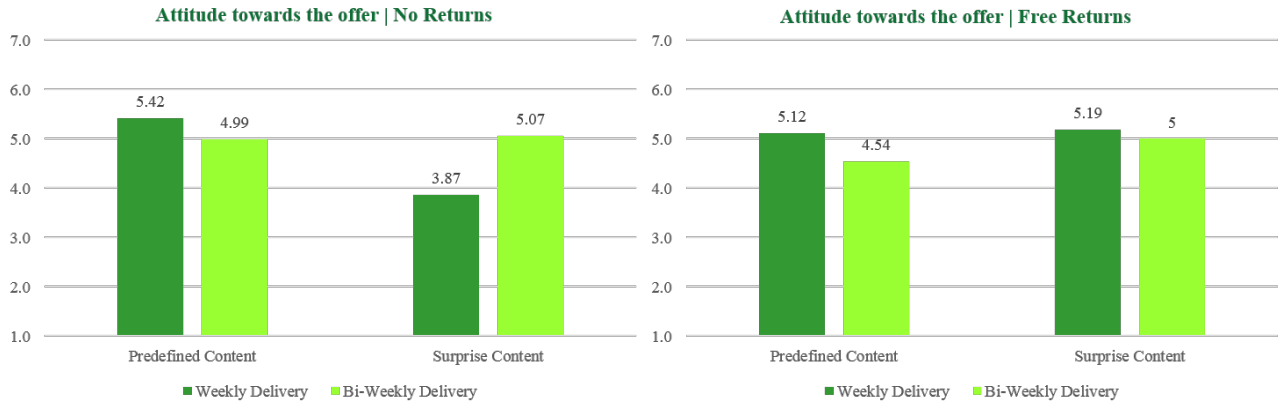


Figure 2: The moderating influence of return options on attitude towards the offering

5 Implications

We highlighted the need for subscription providers to actively manage consumers' risk perceptions. For providers of predefined subscriptions, for example, our results suggested to focus on rather short-term deliveries with smaller product sizes. Providers of surprise subscriptions,

however, should focus on rather long-term deliveries with larger product sizes. Nonetheless, surprise subscription retailers can increase the attractiveness of shorter delivery intervals by introducing an option to return unwanted items. While this would increase costs due to shorter shipping cycles and product returns, it would reduce risks for consumers and could thereby increase their positive attitude towards the offering. A tendency towards deliveries in higher frequencies would also allow subscription retailers to gather more feedback from their customers regarding their subscription assortment, ultimately enabling them to tailor their subscriptions faster and better to consumers' preferences.

6 Limitations and Future Research

This study represents a first step towards further research on product subscription models, but only touched upon food products. A relevant business model in various categories, it would be worthwhile to investigate whether the interaction between subscription mechanism and delivery interval via risk perceptions holds for other categories. Diverging time- and budget-related purchasing patterns could potentially influence the discussed interactions.

Even though improvements in consumers' attitude towards the offering can theoretically lead to improvements in the financial performance of subscription models, it would be useful to test our findings in an actual business context. We therefore propose to examine whether free returns can essentially increase the number, average tenure, and overall satisfaction of subscribers.

7 Conclusions

By exposing participants to product subscriptions, this study showed that attitude towards the offering regarding a product subscription model depended on the interplay between subscription mechanism and delivery interval. Furthermore, it unveiled that the existence of pronounced shopping habits abolished this interaction, because habitual consumers strongly tended towards high-frequency purchases. Moreover, we scrutinized whether risk was an influencing factor in consumers' evaluation process. Building on Prospect Theory, we found that consumers preferred predefined subscriptions in shorter and surprise subscriptions in longer intervals. We extended surprise-related research by using surprise as a retail mechanism rather than an outcome variable and hope to encourage further research in this regard.

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