“Curated subscription commerce: A theoretical conceptualization”

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1. Introduction

When Unilever acquired Dollar Shave Club, a subscription delivering razor blades, in 2016 for an estimated $1 billion, it was widely regarded as a landmark takeover that signaled the emergence of this business model in retailing (Isaac and de la Merced, 2016). It marked another milestone, representative of retail’s recent innovation- and expansion-driven transformation from the physical dimension to the digital environment (Grewal et al., 2012; Kumar and Reinartz, 2016; Paul, 2017; Paul et al., 2016; Shankar and Yadav, 2011).

A study by the consulting company McKinsey found that, with an annual market growth of over 100%, consumer goods subscriptions have already reached 15% of e-commerce shoppers and collectively generated revenues of roughly $2.6B in 2016 (Chen et al., 2018). Moreover, an array of only 57 consumer goods subscriptions has received a total of $1.4 billion of venture capital funding as of 2016 (CB Insights, 2016), and even more subscription providers are trying to establish a foothold in various categories such as beauty and fashion, food and beverage, and home and living as evidenced by the more than 2700 subscription box offerings currently featured on CrateJoy, a marketplace for subscriptions (Cratejoy, 2018). These examples illustrate the attractiveness of consumer goods subscriptions as a means to generate high customer lifetime value within the retail industry.

Prior literature suggests that the subscription earnings model could offer several benefits to retailers. In times of multi-loyal consumers (Bolton et al., 2000; Dwyer, 1997; Lewis, 2004; Meyer-Waarden, 2007), establishing durable relationships with consumers becomes especially important for retailers and fast-moving consumer goods providers. Owing to their procedural advantage of generating recurring purchases, subscriptions could tie retailers and consumers closer together by automating certain purchase decisions. Specifically, a subscriber base is considered an enduring asset with higher barriers to entry than a business based on one-off purchases (Economist, 2018). Furthermore, the measurement of customer lifetime value (Reinartz & Kumar, 2000) and company valuations (McCarthy et al., 2017; Schulze et al., 2011) in contractual settings proved easier than in non-contractual settings, because purchase frequencies and customer lifetime were relatively constant given firm contracts, which increased cumulative profits in the long run and offers managerial benefits.

Still, managing a consumer goods subscription represents a difficult undertaking in practice. Some meal-kit subscriptions suffer from churn rates of up to 10%, which indicates that providers of consumer goods subscriptions need to better understand consumer behavior towards consumer goods subscriptions, especially since competition is destined...
to grow from the 200 m subscriptions across America’s 118M households to over 350M in 2027 (Economist, 2018). The multitudes of subscriptions further contribute to the complexity of managing subscriptions. While they all deliver recurring packages, subscriptions differ especially in terms of their use of surprise as a retail mechanism. While some subscriptions give complete control over the process to the customer and then send the same products over and over (e.g. Amazon Subscribe&Save), others ship surprise boxes to customers who outsourced their decision-making in terms of the products they purchase to the subscription provider (e.g. StitchFix).

Most surprise-related research, however, does not address surprise as a retailing mechanism, but merely as the over- or under-fulfillment of expectations in the moment of consuming a product. In previous product-consumption scenarios, consumers were always unaware of surprises up to their occurrence (Mano and Oliver, 1993; Oliver and DeSarbo, 1989; Oliver et al., 1997). In the case of surprise subscriptions, however, consumers deliberately choose to purchase a surprise subscription, aware of the fact that they cannot control the content of their purchased subscription.

Consumer goods subscriptions are so manifold that they exist in all kinds of variations. Table 1 illustrates this point by outlining the retail mechanisms of selected subscription providers across various categories. Specifically, these retail mechanisms can be described in terms of the delivery interval, items per cycle, degree of surprise, and return option offered by the subscription service. No single retail mechanism that applies to all subscription services equally seems to exist. Instead, some allow their subscribers to select the items that are to be delivered regularly, some do not. Likewise, some allow their subscribers to choose the delivery interval in which these subscriptions are to arrive, others do not. Some surprise subscriptions indicate a motivation to tailor the delivered items, none of which the users select, to their subscribers’ individual preferences, while some do not. Some subscription providers even offer a return option, and others do not.

Given the diversity of retail mechanisms in subscription commerce, this paper aims to contribute to a better understanding of their differences in two ways. First, the paper empirically compares the two extreme archetypes of predefined and curated surprise subscriptions to explore surprise as a retail mechanism within consumer goods subscriptions. The results show that surprise-related subscriptions are perceived as inherently more risky than predefined subscriptions which drives a preference for longer delivery intervals for curated surprise subscriptions than for predefined subscriptions. Furthermore, it is shown how retailers can reduce this perceived risk inherent in surprise subscriptions by implementing a free-return option, and thus attenuate the difference in preferred delivery intervals. Second, a typology of consumer goods subscriptions is developed based on the empirical results that distinguishes between four distinct archetypes of consumer goods subscriptions. This typology represents a new theoretical contribution to the field and could build a basis for future research on subscription services.

The rest of this paper is organized as follows. First, a comprehensive review of extant subscription-related research is provided to map the status quo of the field. Second, a series of three empirical studies is presented which highlight the differences between predefined and curated surprise subscription in terms of their perceived risk and explore the impact on attitude towards the offering and the preferred delivery interval. The authors specifically test surprise as a retail mechanism and consumers’ reactions towards delivery intervals, thereby attending to the longitudinal perception of surprise offerings. Third, this paper introduces a new conceptual typology of consumer goods subscriptions based on the findings in this paper and prior work. Finally, academic and managerial implications as well as avenues for future research are discussed.

2. Literature review and hypothesis development

2.1. A review of extant subscription-related research

In contrast to their popularity among consumers, subscriptions, especially consumer goods subscriptions, have received only little attention among researchers. Despite the respectable body of research on subscriptions, academia has yet contributed much to knowledge creation regarding material-goods subscriptions in retail and marketing. As summarized in Table 2, early extant academic research took

<table>
<thead>
<tr>
<th>Table 1</th>
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</thead>
<tbody>
<tr>
<td>Selected major subscription providers and their retail mechanisms.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Product Context</th>
<th>Subscription Firm</th>
<th>Price</th>
<th>Delivery Interval</th>
<th>Items per Cycle</th>
<th>Degree of Surprise</th>
<th>Return Option</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fashion &amp; Clothing</td>
<td>Blacksocks</td>
<td>Ca. $10 – $20 per Pair</td>
<td>Customizable (e.g. quarterly, annually)</td>
<td>Customizeable</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Stitch Fix</td>
<td>Ca. $275 per Box (adults)</td>
<td>Customizable (e.g. biweekly, monthly, quarterly)</td>
<td>5 Items</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>JustFab</td>
<td>$39.95 per Month</td>
<td>Customizable (dependent on consumption)</td>
<td>Customizable</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Sprezzabox</td>
<td>$25 per Box</td>
<td>Monthly</td>
<td>5 to 6 Items</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Food &amp; Groceries</td>
<td>Amazon Subscribe&amp;Save</td>
<td>Dependent on Product</td>
<td>Customizable (e.g. monthly, semiannual)</td>
<td>Customizable</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Hello Fresh</td>
<td>Ca. $50 - $100 per Box</td>
<td>Weekly</td>
<td>Customizable (2–4 recipes à 2–4 portions)</td>
<td>Somewhat (2–4 out of 15 meals)</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Thrive Market</td>
<td>$59.95 per Year</td>
<td>Customizable (dependent on consumption)</td>
<td>Customizable (dependent on consumption)</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Try the World</td>
<td>$19 or $39 per Box</td>
<td>Monthly</td>
<td>5–10 Items</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Beauty &amp; Decor</td>
<td>Dollar Shave Club</td>
<td>$25 per Box</td>
<td>Customizable (e.g. bi-monthly, quarterly)</td>
<td>2 Items (more items available)</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Birchbox</td>
<td>$10</td>
<td>Monthly</td>
<td>5 Items (solely samples)</td>
<td>Somewhat (choice of 1 item)</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Sephora Play!</td>
<td>$10</td>
<td>Monthly</td>
<td>5 Items (solely samples)</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Crystal Society</td>
<td>$49</td>
<td>Annual</td>
<td>&gt; 1 Figurine per Year</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Glossybox</td>
<td>Ca. $20</td>
<td>Monthly</td>
<td>5 Items</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>
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Table 2: Literature review subscription research and research gap.

<table>
<thead>
<tr>
<th>Research Area</th>
<th>Publication Type</th>
<th>Setting</th>
<th>Measures &amp; Design</th>
<th>Perceived Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer Lifetime Value</td>
<td>Customer Models &amp; churn management</td>
<td>Intangible Goods</td>
<td>Delivery Intervals</td>
<td>No</td>
</tr>
<tr>
<td>Business Models &amp; Churn Management</td>
<td>Profit maximization by leasing or subscriptions</td>
<td>Intangible Goods</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Consumer Goods Subscriptions</td>
<td>Curated surprise subscriptions</td>
<td>Intangible &amp; Tangible Goods</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>This Study</td>
<td></td>
<td></td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Notes:
- **Perceived Risk**
  - No: Risk not considered.
  - Yes: Risk considered.
  - Partly: Risk partly considered.

**Research Gap**
- A mostly managerial perspective by comparing subscription-like earnings models, such as leasing, with regular one-off sales regarding their profitability for software-developing firms (Bulow, 1982; Coase, 1972; Danaher, 2002; Desai and Purohit, 1998; Zhang and Seidmann, 2010).
- While later research moved increasingly toward the consumer realm, it still only considered the application of subscriptions to intangible goods, such as media, TelCo, and entertainment (Burez & Van den Poel, 2007; Dawes, 2004; Dover and Murthy, 2006; Fox, 2004; Keaveney and Parthasarthathy, 2001; Lam and Harrison-Walker, 2003; Pauwels and Weiss, 2008; Wang et al., 2005). A prevailing notion within subscription-related research has been the interest in subscriptions’ potency to increase customer lifetime value (Bolton, 1998; Li, 1995; McCarthy et al., 2017; Oster and Morton, 2005; Reinaert and Kumar, 2000; Schulze et al., 2011). If applied to intangible goods, subscriptions involve the exchange of small, partial payments for full access to a product (Zhang and Seidmann, 2010). Current popular research defines subscriptions as an agreement between consumers and firms regarding recurring purchases of a product or service (Baxter, 2015) but is mostly concerned with the managerial dimension of subscriptions (Baxter, 2015; Janzer, 2015; Randall et al., 2016; Warrillow, 2015).

Only recently have academic publications appeared that aim to unveil a more detailed understanding of consumer behavior toward subscriptions in retailing. Woo & Ramkumar (2018) analyzed utilitarian and hedonic consumer demographics that support openness toward surprise subscriptions. Ramkumar and Woo (2018) elaborated on how hedonic and utilitarian motivations as well as consumption traits affect attitudes toward the offering and, thus, mostly focused on how benefits might increase the appeal of subscriptions. There is still, however, no clarity about which process variables and state variables influence consumers’ propensity to purchase via subscriptions. Albeit not specifically mentioning subscriptions, Chiu et al. (2014) examined utilitarian and hedonic state variables of purchases in an e-commerce environment that could also be applied to subscription purchases. In their analysis, they specifically included the adverse effects of the risk-related negative perceptions of online purchases. Across all those papers, utilitarian and hedonic consumer traits and attributes of the offering influenced attitude towards the offering and repeat purchase intention, with utilitarian slightly surpassing hedonic values in their influence (Chiu et al., 2014; Ramkumar and Woo, 2018; Woo & Ramkumar, 2018). While these papers provide valuable insights into consumer behavior toward consumer goods subscriptions, they do not offer specific means for managers to make their existing subscription offerings more appealing other than potentially helping to optimize advertising toward people with a higher likelihood to purchase a subscription. This extant research, furthermore, does not allow retailers to make an informed choice about whether or how to build a subscription offering that convinces consumers to subscribe. Aside from studying consumers’ propensity to purchase in the form of subscriptions, it is necessary to account for the variety of ways subscriptions can be discerned.

The above-mentioned literature streams also only rarely touch on the topic of delivery intervals and sequences of subscriptions, which could provide insights into the perception of risk involving how often consumers would accept a non-surprising vs. a surprising purchase. The literature, thus, spares a viewpoint on interval management—how often consumers would be willing to receive a package—and observing actual subscription behavior over sequences of subscriptions. As a result, none of the above literature streams has sufficiently tapped into the interaction between surprise mechanisms, their risk-related implications, and the sequential nature of subscriptions, which are all prevalent in today’s subscription offerings.

2.2. Hypothesis development

The present research focuses on the juxtaposition of predefined and curated surprise subscriptions to unveil the workings of surprise as a retail mechanism. Predefined and curated surprise subscriptions appear
to be ideal anchors for comparison because both involve purchases of products that are either surprising or not (see complete typology in the general discussion for subscriptions with differing retail mechanisms). This research, thus, investigates the appeal of subscriptions by employing experimental analyses involving clear archetypical subscriptions. This allows for clear interpretation of the influence of surprise on customer perceptions, while opening the playing field to further subscription-related research.

**Predefined subscriptions.** Some consumer goods subscriptions hold no surprises and ship products the consumer has chosen for recurring delivery. Consumers can subscribe to products they frequently purchase without having to exert the effort to repurchase them. These subscriptions usually keep consumers supplied with everyday items, guaranteeing availability of the products necessary to fulfill regular needs. Amazon Subscribe & Save, for example, allows shoppers to enter into a subscription for certain products, such as groceries, instead of completing one-time purchases. In exchange for entering the desired quantity as well as the desired delivery interval, consumers receive a 15% discount on the price of the item. Dollar Shave Club also ships predefined products, razors with a previously chosen number of blades, thereby eliminating the risk of receiving unappealing products. Blacksocks, a producer of men’s underwear, offers subscriptions for socks and other fashion goods that subscribers specifically choose to receive at regular delivery intervals. Across the lifetime of a subscription, predefined subscriptions do not change assortment, such that, at the instance of purchasing the subscription, consumers know exactly which products they will receive.

**Curated surprise subscriptions.** Providers such as Stitch Fix, Birchbox, Sephora Play!, and HelloFresh offer subscriptions to customized surprise boxes which include fashion, beauty, and food items, respectively. They offer an automated routine in which subscribers receive regular boxes of surprise items within their respective category, which are chosen entirely by the subscription provider but tailored to subscribers’ individual preferences. At the very least, these providers offer a customized suggestion for the items they believe their customers will likely enjoy. The authors refer to those subscriptions as curated surprise subscriptions.

Subscription providers offer their subscriptions in many different delivery intervals: biweekly, monthly, quarterly, and annually. In some cases, this is independent of the eventual number of products ordered. In the case of Blacksocks, for example, customers can either disperse their sock orders throughout the year or receive a bulk delivery at one time. If the overall subscription period is kept stable, shorter delivery intervals would, thus, mean a higher number of deliveries per given period, while longer delivery intervals mean a lower number of deliveries per given period. If the number of products per subscription period is kept stable, shorter delivery intervals would mean more frequent deliveries with fewer or smaller-sized products, while longer delivery intervals would mean less frequent deliveries with more or larger-sized products. Fig. 1 displays the theoretical model of consumers’ evaluation of delivery intervals with regard to consumer goods subscriptions. The following paragraphs will detail the various constructs under scrutiny as well as their interdependencies.

Customers of curated surprise subscriptions run a higher risk of undergoing a negative delivery experience than those of predefined subscriptions, as they are always subject to the providers’ product curation. This is especially important because predefined and curated surprise subscriptions vary with regard to their potential benefits and losses. Prospect theory seems suitable for analyzing the mechanisms of subscriptions because it compares consumers’ motivation to seek benefits and to avoid losses (Crowe and Higgins, 1997; Kahneman and Tversky, 1979). Predefined subscriptions benefit consumers by helping them save on transaction costs through sparing trips to the supermarket for periodically purchased products. Curated surprise subscriptions add value by exposing consumers to new products. The potential for losses, however, is much higher in curated surprise subscriptions than in predefined subscriptions, where consumers do not run the risk of receiving unwanted items, as they specifically choose the products they receive. Predefined subscriptions are, thus, practically risk-free, while curated surprise subscriptions could always result in a loss if products do not match consumers’ tastes.

It is expected that the ability to control the content of a subscription box has an influence on consumers’ perceived risk. According to Heath and Tversky (1991), people perceive everything unknown as riskier. They claim that people would rather place a bet within their area of expertise, even if the chances of winning were vaguer than in a similar event with clear probabilities. Since the content of curated surprise subscriptions is unknown to consumers prior to payment and shipping, the authors posit that curated surprise subscriptions are perceived as riskier than subscriptions involving predefined items.

**H1.** A Surprise Mechanism (vs. Predefined Mechanism) leads to relatively higher (vs. lower) Perceived Risk.

The concept of loss aversion is at the core of this analysis, as people are more sensitive to losses than gains (Kahneman and Tversky, 1984). Since most consumers have not yet purchased consumer goods subscriptions, the level of perceived risk associated with an offering will impact their evaluation thereof. This implies that the level of perceived risk influences a consumer’s attitude toward the offering. Especially in terms of new retail mechanisms or technologies, it is important to inquire about consumers’ evaluation processes regarding such offerings to provide a conceptual understanding of behavioral processes.

Knowing that losses loom larger than gains, one could conclude that the expectation of possibly receiving unappealing products could outweigh the positive anticipation related to curated surprise subscriptions. Plutchik (1980) shed light on the evolutionary nature of various human emotions and identified surprise as an inherently negative emotion. This is because every surprise in itself represents a...
disconfirmation of expectations, which, in nature, could have cost people their lives. The author recognizes and appreciates the positive aspects of the surprise mechanism, especially highlighting its inspirational aspects, but builds on the existing behavioral perspective on surprise as, in its purest form, a risk-infused emotion.

The varied degrees of perceived risk are expected to mediate the pertaining attitude towards the offering. It is posited that risk represents a negatively associated attribute of a product, wherefore it is consequential to propose that higher risk correlates with lower attitude toward the offering. Conversely, it is suggested that lower risk, as inherent in predefined subscriptions, correlates with a more positive attitude toward the offering. After all, shoppers generally seek to purchase products they like and to avoid products that do not match their tastes. Risk is, thus, expected to act as a mediator between the subscription mechanism and attitude toward the offering.

**H2.** Perceived risk negatively influences Attitude towards the Offering.

Recognizing the varying degrees of risk inherent in consumer goods subscriptions, one can assume that consumers have differing preferences for delivery intervals per subscription mechanism. While prospect theory has so far been concerned with ad hoc decisions and immediate outcomes, this study adds to Tversky and Kahneman’s remark that “decision weights may be sensitive to the formulation of the prospects, as well as to the number, the spacing and the level of outcomes” (1992, p. 317). Consequently, it is posited that preferences regarding consumer goods subscriptions react to delivery time intervals because framing variations regarding gains or losses lead to inherently distinctive preferences (Tversky and Kahneman, 1989).

Thinking of receiving unappealing items with a curated surprise subscription as a binary variable of loss perception renders shorter delivery intervals more probable of incurring losses than longer delivery intervals with fewer deliveries. Keeping the value and volume of products stable, dividing the delivery among several packages would, thus, increase the probability of losses, for every single delivery could potentially contain products that subscribers dislike. According to prospect theory, a single delivery with unwanted products would represent only one larger disappointing instance, while several deliveries with smaller disappointments would be weighted more heavily. Because they attempt to prevent frequent small losses through unwanted products, it is assumed that consumers prefer curated surprise subscriptions in longer intervals than predefined subscriptions. A curated surprise subscription with short delivery intervals (ergo more frequent, smaller deliveries) would elicit lower attitudes toward the offering than a predefined subscription with similar delivery intervals. Conversely, longer delivery intervals would increase attitude toward the offering in curated surprise subscriptions.

**H3.** Subscription Mechanism and Delivery Interval interact, such that Surprise (vs. Predefined) Mechanisms are preferred in Long (vs. Short) Delivery Intervals.

In accordance with the above delineations, one can conclude that an option to return unwanted items diminishes the moderated mediation by perceived risk. This is because when free returns are permitted, consumers of curated surprise subscriptions do not need to keep unwanted items and are therefore able to keep only those items that appeal to them. Curated surprise subscriptions are perceived as riskier because subscribers relinquish control of the items they purchase to the subscription provider. The opportunity to return items free of charge gives a significant amount of control back to subscribers. While shoppers would still be unable to choose which items they receive, they could at least choose which items to keep. Enabling customers to keep only products of interest, thus, reduces the risk of receiving unwanted products.

It is proposed that introducing free returns in both conditions equalizes the risk-related difference between predefined and curated surprise subscriptions, as consumers in both conditions can be sure that they will pay only for items that they keep. Altogether, the risk-free return condition renders both predefined and curated surprise subscriptions equal and diminishes the mediating function of risk perception.

**H4.** An option to return items for free diminishes the interaction effect between subscription mechanism and delivery interval on Attitude towards the Offering.

Following the development of the hypothesis, the next section describes the experimental studies following the same structure and sequence as for the hypotheses. The first study aims to establish consumers’ tendencies to choose different delivery intervals for subscriptions with different degrees of surprise. The second study seeks to identify the process that drives consumers to prefer different delivery intervals by exposing consumer’ perceived risk and attitude towards subscriptions with different degrees of surprise. The third study serves to identify a way to moderate the effect of perceived risk inherent in subscriptions with a high degree of surprise via an option to return items.

3. Study one: free choice of delivery interval

This study investigates the main effect of preference for longer or shorter delivery intervals regarding predefined or curated surprise subscriptions. It analyzes a key concept within the theoretical model, namely the effect of the subscription mechanism on the preferred delivery interval. This experiment exposes participants to one of two stimuli in a one-factorial between-subjects experimental design, displaying either a predefined or surprise subscription. Consumers’ preferences for delivery intervals are consequently measured. According to this theoretical model, it is posited that consumers prefer curated surprise subscriptions with longer delivery intervals and predefined subscriptions with shorter delivery intervals.

3.1. Stimuli and pretest

A pretest was used to confirm differences between predefined and curated surprise subscriptions in terms of their perceived degree of uncertainty and perceived degree of surprise. To this end, 130 U.S. participants (MTurk) were recruited, between 12 and 84 years old (M<sub>age</sub> = 35). 59% of the participants were male. A between-subjects design randomly assigned participants to one of the stimuli and asked them to rate the stimuli along four scales: degree of uncertainty, degree of surprise, perceived value, and perceived usefulness. In terms of uncertainty and surprise, participants were asked to indicate their agreement with two statements each, such as “I feel uncertain about which products I would receive with this subscription” (α = 0.93) and “I will be surprised by the products every time I receive a delivery” (α = 0.94). Both scales were measured on a seven-point Likert scale with responses ranging from “strongly disagree” to “strongly agree.” To rule out an offering’s inferiority or a general tendency toward either stimulus, participants were also asked to indicate on a seven-point semantic differential whether they would expect the value of a subscription delivery to be “lower than promised” or “higher than promised.” They further rated its perceived usefulness on a seven-point semantic differential with the word pairs “ineffective – effective,” “not functional – functional,” and “useless – useful” (α = 0.92).

This study confirmed highly significant differences between the predefined and surprise stimuli regarding the perceived degree of uncertainty (F (1, 128) = 6.30, p = .01) and perceived degree of surprise (F (1, 128) = 19.90, p < .001). Compared to the predefined subscription, the curated surprise subscription was rated as significantly more uncertain (M<sub>Surprise</sub> = 5.19, SD = 1.74; M<sub>Predefined</sub> = 4.43, SD = 1.71) and more surprising (M<sub>Surprise</sub> = 5.68, SD = 1.24; M<sub>Predefined</sub> = 4.54, SD = 1.66). Differences in perceived value (F (1, 128) = 0.90, p = .38) and perceived usefulness (F (1, 128) = 0.21, p = .65) were insignificant.
p = .65) were ruled out. Both subscriptions were thought to contain items of similar value (M_{Surprise} = 4.76, SD = 1.63; M_{Predefined} = 4.77, SD = 1.62) and to be similarly useful (M_{Surprise} = 5.35, SD = 1.34; M_{Predefined} = 5.24, SD = 1.36). This highlights the prominent differences of both subscription archetypes in terms of risk-related variables and speaks to their general appeal.

3.2. Participants and procedure

209 US participants were recruited from an online panel (MTurk) to take part in the experiment in exchange for a small monetary compensation. In line with current guidelines for experimental research (Meyvis and Van Osselaer, 2017, p. 1163), it was necessary to exclude eight participants who failed an instructional manipulation check (IMC) and 20 participants with such high preexisting habits that the experimental procedure would not be expected to work for them, yielding a final sample of 181 participants between 19 and 68 years of age (M_{Age} = 35), of whom 53% were female.

At the beginning of the experiment, participants were exposed to a cover story about a fictional French grocery subscription called Grocerée, which was planning to expand into the United States. The fictional company had achieved much success with its food subscription, where consumers would receive boxes filled with grocery items in regular intervals. Similar to a cell phone contract, consumers would simply pay a monthly fee for these boxes until they canceled their subscription. Participants were told that the firm’s management had asked our team to help improve their service by conducting market research on customers’ needs. Participants also learned about an additional raffle of a subscription according to the winner’s preferences, so it was in participants’ best interests to act in accordance with their true preferences.

Participants then encountered one of the two stimuli, an advertisement for either predefined or surprise food. Both stimuli showed mostly identical information but highlighted different benefits: convenience in the case of predefined subscriptions and inspiration in the case of curated surprise subscriptions. Both subscriptions cost $59 per month and guaranteed a certain number and value of products each month. Participants were then asked to indicate on a continuous scale, how many deliveries they would like to receive per month, with options ranging from one to eight deliveries. The monthly price was kept stable using the following wording: “How many deliveries of this subscription would you like to receive per month? Your monthly fee and the overall value of products stay the same. More deliveries mean smaller product sizes, fewer deliveries mean larger product sizes.”

3.3. Results and discussion

Table 3 summarizes the results obtained from the laboratory experiments in this research. An OLS regression was used to test the relation between the subscription mechanism and consumers’ preferences for delivery intervals. Regressing the chosen number of deliveries on the subscription mechanism yielded a negative effect, such that the more surprising offering was preferred in fewer deliveries than the less surprising offering (B = -0.31, t(179) = -2.34, p < .05). Fig. 2 shows that, as hypothesized, participants preferred to receive more deliveries on a monthly basis for predefined subscriptions (M_{Predefined} = 2.78, SD = 1.97) than for curated surprise subscriptions (M_{Surprise} = 7.0).

<table>
<thead>
<tr>
<th>Study 1</th>
<th>Study 2</th>
<th>Study 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>181</td>
<td>194</td>
</tr>
<tr>
<td>Free Choice of Delivery Interval (OLS)</td>
<td>Mechanism</td>
<td>- .314 * (.134)</td>
</tr>
<tr>
<td>Interaction btw. Mechanism &amp; Interval (OLS)</td>
<td>F-Value</td>
<td>5.46 * (1, 179)</td>
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<tr>
<td>Abolishment of Interaction via Free Returns (OLS)</td>
<td>Partial Regression 1: Effects on Risk</td>
<td></td>
</tr>
<tr>
<td>Direct Effects</td>
<td>Mechanism (H1)</td>
<td>.263 * (.112)</td>
</tr>
<tr>
<td>Freedom-of-Fit Statistics</td>
<td>F-Value</td>
<td>.094 (.108)</td>
</tr>
<tr>
<td>Degrees of Freedom (df1, df2)</td>
<td>(, 192)</td>
<td>(, 113)</td>
</tr>
<tr>
<td>R-Squared</td>
<td>.090 (.106)</td>
<td>.060 (.137)</td>
</tr>
<tr>
<td>Partial Regression 2: Effects on Attitude</td>
<td>Risk (H2)</td>
<td>.420 *** (.069)</td>
</tr>
<tr>
<td>Direct Effects</td>
<td>Risk</td>
<td>-.131 * [-.50, -.27]</td>
</tr>
<tr>
<td>Freedom-of-Fit Statistics</td>
<td>Mechanism*Interval (H3)</td>
<td>.255 * (.108)</td>
</tr>
<tr>
<td>Degrees of Freedom (df1, df2)</td>
<td>Risk*Returns</td>
<td>-.198 * (.096)</td>
</tr>
<tr>
<td>R-Squared</td>
<td>Risk<em>Interval</em>Returns (H4)</td>
<td>-.102 (.138)</td>
</tr>
<tr>
<td>Conditional Indirect Effects via Mediator Risk on Attitude</td>
<td>Risk<em>Interval</em>Returns (H5)</td>
<td>-.407 *** (.141)</td>
</tr>
<tr>
<td>Conditional Direct Effects on Attitude</td>
<td>F-Value</td>
<td>.960 *** (.108)</td>
</tr>
<tr>
<td>Degrees of Freedom (df1, df2)</td>
<td>R-Squared</td>
<td>.20</td>
</tr>
<tr>
<td></td>
<td>Mechanism<em>Interval</em>Non-Returns</td>
<td>-.209 (.156)</td>
</tr>
<tr>
<td></td>
<td>Mechanism<em>Interval</em>Non-Returns</td>
<td>.301 * (.150)</td>
</tr>
<tr>
<td></td>
<td>Mechanism<em>Interval</em>Non-Returns</td>
<td>.436 * (.263)</td>
</tr>
<tr>
<td></td>
<td>Mechanism<em>Interval</em>Non-Returns</td>
<td>.064 (.234)</td>
</tr>
</tbody>
</table>

This table reports unstandardized coefficients and standard errors for direct effects calculated via the OLS regressions alongside goodness-of-fit statistics for each individual regression throughout studies 1, 2, and 3. The indirect effects are featured through unstandardized coefficients and bootstrapped confidence intervals (CI = 95%), as relevant to Study 2 and 3 (Samples: 5000). All variables were mean-centered prior to analysis.

(\chi^2(1) = 1.80, n.s.)

Specifically, the authors measured shopping habits based on the scale developed by Sproles and Kendall (1986), e.g. “I have favorite brands I buy over and over”. Only the most extreme participants that had the highest possible score of 7.0 on all 7-point Likert items were excluded. Participants deleted from the sample due to their extreme habits were equally distributed across the two experimental conditions and, thus, did not affect the overall data structure (\chi^2(1) = 1.80, n.s.).
to delivery which products to receive. Given that freshness is a relevant decision factor in grocery shopping, it is understandable that subscribers to predefined grocery subscriptions would select shorter delivery intervals, especially when consumers need not pay for shipping, as shown in this experiment. Although both customers of predefined and curated surprise subscriptions have the same needs in terms of freshness regarding their groceries, the surprise option does indeed prompt consumers to select longer delivery intervals.

4. Study two: identifying the process of evaluating consumer goods subscription offerings

After having found a significant difference in preferred delivery intervals regarding predefined and curated surprise subscriptions, a second study was dedicated to the process that governs shoppers’ evaluation of consumer goods subscriptions. This study exposed consumers to stimuli similar to those used in the first study. This time, however, the delivery interval was manipulated in the stimuli shown. Participants were shown an advertisement of either a predefined or surprise grocery subscription that Grocerie would deliver on either a weekly or biweekly basis, keeping the number of products and the monthly price stable. Using established marketing scales, the proposed interaction between subscription mechanism and delivery interval was examined with regard to perceived risk and attitude toward the offering.

4.1. Participants and procedure

An online-based experiment targeting respondents from the U.S. (MTurk) was conducted. 208 respondents participated in the survey. In line with the reasoning in Study 1 and recent guidelines for experimental analysis (Meysis and Van Osselaer, 2017, p. 1163), four respondents who failed to answer the IMC as well as ten participants with extremely high habits (Habit = 7.0) were excluded, yielding a final sample of 194 respondents between 18 and 71 years of age (M_age = 35), of which 54% were male. The removed participants were equally distributed across all four experimental conditions and, thus, did not affect the overall data structure ($\chi^2 (3) = 2.00, p = .57$).

To investigate the hypothesized interaction, a 2 (subscription mechanism: predefined vs. surprise) x 2 (delivery interval: short vs. long) between-subjects design was used. Participants were randomly assigned to one of the groups. The predefined condition showed an ad for a grocery subscription in which consumers would choose the items prior to delivery, similar to the prior stimulus. The surprise condition showed an ad that stated consumers would receive surprise items according to their general preferences, similar to the prior stimulus. Each condition included the option of either weekly or biweekly delivery, while keeping the number of contents and the monthly subscription fee of $59 stable. Participants then filled out a questionnaire that included measures for attitude toward the offering and perceived risk.

4.2. Construct measurement

Reliable multi-item measures were used to capture the constructs under scrutiny. Overall attitude toward the offering was assessed through a six-item scale from Dimofte et al. (2003, p. 12, $\alpha = 0.97$) and was measured on a seven-point semantic differential scale 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 ($\alpha = 0.94$), such as “Getting a grocery subscription is risky,” with answers ranging from “fully agree” to “fully disagree.”

4.3. Results and discussion

To investigate the proposed theoretical model, this study ran a Preacher et al. (2007) moderated mediation analysis (model 15) with attitude toward the offering as the dependent variable, the box mechanism dummy variable as the independent variable, perceived risk as the mediator, and the delivery interval dummy variable as the moderator. A moderated mediation model involving the state and trait variables central to this argumentation was used, as outlined in Fig. 1, except for the manipulation for free returns, which comes in at the next experiment. All variables were mean-centered prior to analysis. The subscription mechanism significantly influenced perceived risk, such that the surprise mechanism coincided with higher perceived risk ($B = 0.26, t (192) = 2.35, p < .05$). This supports H1. Perceived risk, in turn, had a highly significant negative effect on attitude toward the offering ($B = -0.42, t (188) = -6.07, p < .001$), which provides evidence for H2. The interaction between subscription mechanism and delivery interval had a significant effect on attitude toward the offering ($B = 0.26, t (188) = 2.36, p < .05$), providing further support for H3.

To test the moderated mediation, bootstrapped confidence intervals for the indirect effects via risk (Samples: 5000) were used. Inspection of the conditional indirect effects showed that risk functions as a mediator for the effect of mechanism (surprise vs. predefined) on attitude toward the offering for short delivery intervals ($B = -0.09, 95\% CI = [-0.22, -0.01]$). In contrast, there was no significant indirect effect for long delivery intervals ($B = -0.13, 95\% CI = [-0.28, -0.02]$), supporting a moderated mediation. Even though a significant direct effect of the interaction between subscription mechanism and delivery interval on attitude towards the offering ($B = 0.26, t (188) = 2.36, p < .05$) remained, it can be concluded that perceived risk can at least partly explain the interaction between mechanism and delivery interval (Zhao et al., 2010). To this end, partial mediation via perceived risk is established.

Planned contrasts revealed that while perceived risk did not differ across delivery intervals in the predefined condition ($M_{PredefinedShort} = 3.49$, $M_{PredefinedLong} = 3.54$), they varied in the surprise condition ($M_{SurpriseShort} = 4.23$, $M_{SurpriseLong} = 3.84$), rendering the long delivery interval less risky. In accordance with Study 1, attitude toward the offering in the predefined condition was higher for short delivery intervals ($M_{PredefinedShort} = 5.30$) than long ones ($M_{PredefinedLong} = 4.62$). Conversely, attitude toward the offering in the surprise condition was higher for long delivery intervals ($M_{SurpriseShort} = 4.63$, $M_{SurpriseLong} = 5.08$). Analogous to the first study and in support of H1, H2, and H3, Fig. 3 portrays consumers’ preferences towards longer delivery intervals for surprise and shorter intervals for predefined subscriptions, while also depicting the mediating influence of perceived risk.
5. Study three: manipulating risk to influence attitude towards the offering

Since preliminary evidence was found for perceived risk regarding predefined and curated surprise subscriptions affecting consumers' attitudes towards the offering, risk perception was manipulated in the third study. In order to reduce the risk of receiving unappealing products, a free-return option was introduced, which allowed subscribers to a fictional grocery subscription to return products in exchange for a full refund. It was hypothesized that the option to return unwanted items for free would significantly reduce the risk perception and render both subscription types equally attractive. This study sought to reveal ways for retailers to steer consumers' preferences regarding the interaction between subscription mechanisms and intervals.

5.1. Participants and procedure

A third online experiment was conducted (MTurk) with 207 U.S. respondents. In addition to reapplying the four conditions included in the second study, four further stimuli were introduced. The four stimuli from the second study were displayed either with or without a free-return option. Statistics were calculated using only those participants who passed the IMC: the second study were displayed either with or without a free-return option. Most respondents had to indicate correctly whether their offering included returns primarily complicates the replication of former studies' effects and does not increase researcher degrees of freedom (Meyvis and Van Osselaer, 2017). Consistent with Study 1 and 2 (Meyvis and Van Osselaer, 2017, p. 1163), 19 participants with extremely high habits (Habit = 7.0) were removed, resulting in a final sample of 115 respondents between 18 and 74 years of age (M Age = 34), of whom 58% were male. It is important to note that the attrition was not significantly related to the experimental conditions (Study 3: x^2 (6) = 3.47, p = .75) and is, thus, unlikely to introduce a confound.

5.2. Construct measurement

The dependent variable as well as the other state variables from previous studies were maintained. Reliability analysis yielded high scale reliability for attitude toward the offering (α = 0.95) and perceived risk (α = 0.92).

5.3. Results and discussion

In accordance with Preacher et al. (2007), this study calculated a moderated mediation as depicted in Fig. 1, with attitude toward the offering as the dependent variable, the box mechanism dummy as the independent variable, perceived risk as the mediator, and the delivery interval and free-return option dummies as moderators (model 19).

The subscription mechanism led to higher levels of perceived risk, such that participants perceived more risk in curated surprise subscriptions than in predefined subscriptions (B = 0.30, t (113) = 2.16, p < .05, M RiskSurprise = 4.62, M RiskPredefined = 3.76). This reproduced earlier results that participants perceived the curated surprise subscription stimulus as significantly riskier than the predefined subscription stimulus. This supports H1.

Perceived risk again had a highly significant negative effect on attitude toward the offering (B = -0.61, t (103) = -6.44, p < .001). The risk perceived from the variance in uncertainty across the stimuli strongly affected consumers' evaluation of the subscription offering. To measure the impact of the stimulus on attitude towards the offering, the contrasts in attitude toward the offering in the predefined and curated surprise stimuli for all participants in the condition without free returns were calculated. An ANOVA comparing both stimuli in the condition without free returns produced the result that consumers' attitude toward the offering does not differ significantly between the two (F (1, 47) = 2.32, p = .14, M AttitudeSurprise = 4.41, M AttitudePredefined = 5.11). This supports the influence of risk as a mediator and yields evidence for H2.

Considering the underlying logic of the framework regarding the interplay of retail mechanism with delivery intervals, a replication of earlier results is found. Fig. 4 depicts patterns regarding delivery interval preferences that are identical to those found in Study 2. Planned contrasts show that curated surprise subscriptions elicit higher attitude toward the offering in long delivery intervals than in short ones (t (107) = 1.67, p < .10; MSurpriseShortNoReturns = 4.92, MSurpriseLongNoReturns = 4.29). In the free return condition, however, this effect was successfully eliminated (t (107) = -0.87, p = .39; MSurpriseShortWithReturns = 5.30, MSurpriseLongWithReturns = 4.79). This supports H3.

A three-way interaction between subscription mechanism, delivery interval, and free returns was found (B = -0.41, t (103) = -2.89, p < .01). Furthermore, the research discovered a significant interaction between perceived risk and free returns (B = -0.20, t (103) = -2.06, p < .05), which indicates that the possibility of free returns significantly reduces perceived risk. The moderated mediation was tested by calculating bootstrapped confidence intervals for indirect effects of subscription mechanism on attitude toward the offering (Samples: 5000). These effects were significant for three of four indirect paths. In the condition with free returns, there were significant indirect effects for short delivery intervals (B = -0.27, 95% CI = [-0.64, -0.03]) and long intervals (B = -0.21, 95% CI = [-0.47, -0.03]). Although the condition without free returns produced an insignificant
indirect effect for short intervals (B = -0.06, 95% CI = [-0.27, 0.03]), there was a significant indirect effect for long intervals (B = -0.17, 95% CI = [-0.50, -0.01]). Given that the mechanism had no significant direct effect on attitude towards the offering (B = 0.09, t (103) = 0.69, p = .49), similar to interval (B = 0.06, t (103) = 0.44, p = .66) and free returns (B = -0.10, t (103) = -0.74, p = .46), a mediating function of perceived risk (Zhao et al., 2010) can be inferred. This supports H3 and H4.

In conclusion, the combined results of all three studies suggest that consumers recognized and reacted to differences between types of subscription services in line with the proposed hypotheses. Table 4 summarizes all four hypotheses under investigation along with their status of support. Consumers perceived higher risk regarding surprising vs. non-surprising subscriptions (H1), which affected their attitude towards the offering (H2) and their preferences for delivery intervals (H3). Furthermore, targeted interventions such as providing a free return option were able to attenuate differences between these two types of subscriptions (H4). These results support the importance of surprise as a distinct retail mechanism in consumer goods subscriptions.

6. General discussion

6.1. The need for a new typology of consumer goods subscriptions

As described in the introduction and illustrated in Table 1, consumer goods subscriptions exist in a variety of forms and throughout many different retail industries. However, little is known about differences between these subscriptions and their retail mechanisms. Through the empirical analysis of two types of retail mechanisms, predefined subscriptions and curated surprise subscriptions, this research provides first evidence for the fundamental differences between types of subscriptions from consumer and managerial perspectives. Specifically, the type of subscription impacts consumers perceived risk, their attitudes towards the offering, and subsequently their choices in terms of the desired delivery intensity. Differentiating between types of consumer goods subscriptions therefore seems highly relevant not only from an academic perspective but also to guide marketing managers in selecting the most important features for their subscription services.

Although this paper investigates two important archetypes of consumer subscription services, more archetypes are likely to exist. However, previous research has not yet laid the final foundations for marketing researchers to address the topic of consumer goods subscriptions succinctly. In an effort to present a more holistic picture of consumer subscription services, this last part of the paper thus seeks to generate a holistic typology as a means of crafting a common nomenclature to refer to the variety of subscriptions. Typologies can help create a common denominator by which to address complex topics. Typologies can simplify reality, highlight essential nuances within marketing-relevant phenomena, and improve their understanding among lay people and experts. Retailing has a history of typologies, especially in terms of shopper motivation, which all help to disentangle complex issues. Such typologies can help retailers in strategic decision-making by allowing them to direct their promotional efforts to where they would have the highest impact (Westbrook and Black, 1985). Finally, typologies delineate a playing field in which future research can position itself, as was pursued by Kotler (1972) via his attempt to identify the contexts and types of marketing.

6.2. Relevant dimensions: degree of surprise and degree of personalisation

There have been prior attempts to categorize consumer goods subscriptions, which partitioned the retail portion of the emerging subscription economy into various archetypes. These attempts achieved mixed results. Rudolph, Bischof et al. (2017) extended existing popular research on subscriptions by Janzer (2015) and Warrillow (2015), among others, and arrived at a typology that is structured along a
In addition to predefined and curated surprise subscriptions, which were discussed earlier in this paper, the proposed framework features two additional subscription models, namely access and general surprise subscriptions.

**General surprise subscriptions.** Subscription providers such as Glossybox, Try the World, and Sprezzabox also ship boxes with a surprise array of products, whose specific contents subscribers have no control over. The authors refer to these subscriptions as general surprise subscriptions, as consumers have no say regarding the selection of shipped items and, thus, receive an assortment of products not tailored to their individual preferences. Both curated and general surprise subscriptions cater to consumers’ urge for discovery, which can inspire consumers to look beyond their regular purchases by endowing them with the idea to try something new. This is where surprise-related subscriptions follow the inspiration process, catering to a passive (inspired-by) and active (inspired-to) component of customer inspiration (Boettger et al., 2017).

**Access subscriptions.** Another type of subscriptions concerns those that act as memberships to exclusive products and purchasing environments. The authors refer to those offerings as access subscriptions because, similar to online newspapers, these subscription providers hide their products behind a paywall to render the contents more exclusive. Firms such as JustFab, Thrive Market, and the Swarovski Crystal Society charge a fee to become a member of their respective fashion, food, and decor clubs, which all allow their members to purchase special products. As the membership fee, hereby, mostly does not entail receipt of a product, customers do face some risk in subscribing, since most assortments of access subscription providers are not visible to non-members. Having gained membership, subscribers deliberately decide which products to purchase, and thus they have control over the decision-making in terms of their purchases.

For further detail, Table 5 builds on the work of Rudolph et al. (2017) but adapts the data gathered by those authors to the new fourfold typology of consumer goods subscriptions rather than the prior threefold typology. It, thus, builds on a reanalysis of the qualitative interviews of Rudolph et al. (2017) and details the KPIs and mechanisms for each subscription archetype.

In sum, the proposed framework crosses the dimension of surprise, which is the main focus of this paper, with the dimension of personalization, which has been suggested as a relevant difference between subscription services in prior literature. The resulting four archetypes of consumer good subscription services are distinct from the perspective of consumers and imply different managerial priorities. The next section
consumers, subsequently increase their positive attitude toward the offering. For providers of predefined subscriptions, however, cost-benefit considerations appear to dominate, as consumers' personal tastes would be taken into consideration. This, however, did not stymie the high levels of perceived risk. Curated surprise subscription providers, thus, need to argue convincingly for the aptness of their surprises to lower the threshold for customers joining such a subscription.

Companies must convincingly communicate the accuracy and effectiveness of their curation algorithm and strategy in forecasting and matching consumers’ individual preferences and tastes. Effectively doing so may diminish the level of perceived risk in consumers by increasing trust that surprise deliveries will be to their liking. Incumbent retail corporations especially should see an opportunity in curated surprise subscriptions, as their extensive customer behavior data and longstanding experience would make them prime candidates to position themselves as experts in crafting surprises according to consumers’ individual shopping preferences. This would enable them to tailor subscriptions with a controlled degree of surprise. The surprise stimulus in these studies already stated that consumers’ personal tastes would be taken into consideration. This, however, did not stymie the high levels of perceived risk. Curated surprise subscription providers, thus, need to argue convincingly for the aptness of their surprises to lower the threshold for customers joining such a subscription.

Providers of curated surprise subscriptions can reduce uncertainty-related risk by increasing certainty about upcoming shipments. Allowing customers to preselect some items can decrease uncertainty, as customers will become familiar with a portion of the items in their delivery prior to their receipt. Subscription providers could further reduce uncertainty without omitting the surprise aspect by pre-announcing the contents of upcoming shipments. More concrete knowledge of what future deliveries hold may not only decrease uncertainty, but could also increase positive anticipation, as customers have something

<table>
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<tr>
<th>Table 5</th>
<th>Management matrix of subscription archetypes (adapted from Rudolph et al., 2017).</th>
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<td>Predefined Subscriptions</td>
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<td></td>
<td>• Average Basket Size</td>
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7. Implications, limitations and future research

7.1. Implications

The results of this research have several important consequences for consumer goods subscription providers. First, there is a need for subscription providers to actively manage consumers’ risk perception and attitude toward the offering. For providers of predefined subscriptions, these results favor a focus on short delivery intervals with smaller product sizes. Providers of curated surprise subscriptions, however, should focus on longer delivery intervals with larger product sizes. It appears that the risk pertaining to surprise boxes leads to risk-averse behavior, wherein consumers place an emphasis on minimizing said risks.

Moreover, curated surprise subscription providers can increase the attractiveness of shorter delivery intervals by introducing an option to return unwanted items. While this would increase costs with shorter shipping cycles and product returns, it would reduce risks for consumers, subsequently increasing their positive attitude toward the offering, and likely increase adoption rates among new shoppers. A free-return option would, thus, allow for more deliveries in the time that subscribers regularly stay with the company. This would allow subscription retailers to gather customer feedback earlier and more quickly tailor their subscriptions to consumers’ preferences.

Shorter delivery intervals, despite the increased shipping costs, could lead to higher revenues, especially if monthly prices are variable. A free-return option could prove beneficial for curated surprise subscription providers if the extra revenue from more frequent deliveries outweighs the additional shipping costs. In contrast, for providers of predefined subscriptions, a free-return option would be impractical as it would increase bottom-line costs and seems to do little in changing consumer preferences.

Despite higher levels of risk, curated surprise subscription providers also benefit from flexibility. In contrast to providers of predefined subscriptions, curated surprise subscription providers are not obligated to deliver a specific product or a certain quality. The opportunity to decide on the value of deliveries allows curated surprise subscription providers to flexibly adjust their sourcing to their current business situation. The surprise mechanism itself is the product and increases the emotional value of items inside the subscription box. This flexibility, however, comes at the cost of higher perceived risk, which may alienate risk-averse consumers.

Companies must convincingly communicate the accuracy and effectiveness of their curation algorithm and strategy in forecasting and matching consumers’ individual preferences and tastes. Effectively doing so may diminish the level of perceived risk in consumers by increasing trust that surprise deliveries will be to their liking. Incumbent retail corporations especially should see an opportunity in curated surprise subscriptions, as their extensive customer behavior data and longstanding experience would make them prime candidates to position themselves as experts in crafting surprises according to consumers’ individual shopping preferences. This would enable them to tailor subscriptions with a controlled degree of surprise. The surprise stimulus in these studies already stated that consumers’ personal tastes would be taken into consideration. This, however, did not stymie the high levels of perceived risk. Curated surprise subscription providers, thus, need to argue convincingly for the aptness of their surprises to lower the threshold for customers joining such a subscription.

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more specific to look forward to.

Managers can profit from this project through understanding the process with which shoppers evaluate consumer goods subscriptions according to their archetypes on the control-surprise continuum. The authors contribute to managerial practice by providing an understanding of the tradeoffs involved in the infant technology of automated shopping. Similar to how former industrial revolutions have made production more efficient through automation, subscriptions can take the burden off customers by automating their purchases.

The awareness of subscriptions as both a utilitarian and hedonic tool to delight customers via recurring purchases enhances marketers’ toolkits for engaging with their customers. Since subscriptions, however, are more diverse than the two archetypical representations discussed in this paper, the authors aim to provide a more holistic framework that takes into account the diversity of the industry.

7.2. Limitations and future research

This paper represents a first step towards a better understanding of consumer goods subscriptions and aims to stimulate further research in this area. Multiple avenues for future research exist.

Theory. Like any typology of a complex phenomenon, the four archetypes proposed in this paper bear the risk of oversimplifying the granularity and variety of subscriptions currently active in the market. While the authors tried to provide a useful and comprehensive categorization based on real-world examples of different consumer goods subscriptions, they are aware of the fact that subscriptions may exist along continua of surprise and personalization, exhibiting varying degrees of surprise and control. Overall, the authors see most value in focusing on archetypes that represent extreme points as it allows them to clearly distinguish, map, and discuss the relevant dimensions (i.e., the degree of predefinition and surprise). A more granular discussion of this dimension, taking into account various business models along the spectrum, would be relevant for academia and practice. This is why future researchers are encouraged to consider all four archetypes of subscriptions, but especially Access and General Surprise Subscriptions, to render a complete picture of consumers’ attitudes towards consumer goods subscriptions. Additionally, future researchers should look beyond the risk- and benefit-related aspects of subscriptions and expand the field by applying further theories. In doing so, future research may complement the proposed model in terms of other process-relevant variables that this paper has not considered.

Method. While this paper sheds light on the basic perception of subscriptions in the general public by administering randomized experiments, future studies could focus on a subset of customers to whom surprise mechanisms and subscriptions are especially relevant. Although the authors employed a more conservative approach to their studies and deliberately refrained from including any control variables in our models beyond dealing with extremely habitual consumer types, they encourage future research to examine consumer evaluations of subscriptions with a focus on risk-loving, variety-seeking, and convenience-oriented shoppers. In addition, the findings of this paper should, furthermore, be replicated and validated in a real-world setting. Even though improvements in consumers’ attitude towards the offering can theoretically result in improved financial performance of subscriptions, it would be useful to test the findings of this paper in an actual business context. The authors therefore propose to examine whether free returns can essentially increase the number, average tenure, and overall satisfaction of subscribers.

Context. Since consumer goods subscriptions are a relevant business model in various categories, it would be worthwhile to investigate them not only for food but also for other product categories. It would be particularly interesting to see whether the interaction between subscription mechanism and delivery interval holds for other product categories as well. Diverging time- and budget-related purchasing patterns as well as general shopping preferences could potentially influence these interactions. Generally, marketing research should pioneer the generation of insights about new technologies and business models and thereby venture into other automation-related fields to help corporations leverage the digital transformation. Artificial intelligence represents the next frontier of taking burdens off humans. It is thus natural that automated shopping procedures, such as subscriptions, continue to grow, as shoppers outsource more of their tasks to digital concierges. It is furthermore understandable, if shoppers continue to outsource even hedonic processes such as the, sometimes tedious, aspect of looking for new products and inspiration. Familiarizing oneself with the phenomenon of automated commerce will thus be crucial for academics and managers alike.

8. Conclusion

There is a dearth of behavioral research in the realm of subscription services, especially regarding physical consumer products. This paper represents a first step towards a better understanding of differences between consumer good subscription services and surprise as a retail mechanism. Based on a comprehensive review of existing literature on subscriptions, the dimension of surprise in consumer goods subscriptions was explored, as part of which consumer preferences for predefined and curated surprise subscriptions were compared. Three studies found that consumers preferred shorter delivery intervals for predefined subscriptions and longer delivery intervals for curated surprise subscriptions. Moreover, the authors provided evidence for the mediating role of perceived risk in driving these differing preferences, which was explained using Prospect Theory. Additionally, this paper showed ways to manipulate and reduce the impact of perceived risk associated with surprise purchases by offering an option to return unwanted items. Finally, a new typology for consumer goods subscriptions was introduced to classify subscription providers along their degree of personalization and the degree of surprise inherent in their subscription offering. As a result, four different archetypes of consumer goods subscriptions were proposed to guide future research in the field of consumer goods subscriptions. Thereby, this research intends to contribute to a more innovative, surprising, and enchanting retail environment. Subscription and automated commerce need not become a commodity. Instead, they must leverage the power of technology-enabled inspiration to create value for customers and companies in a digital age.

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Appendix

Fig. 6. Predefined Subscription Stimulus (Study 1)

Fig. 7. Curated Surprise Subscription Stimulus (Study 1)
Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.jretconser.2019.04.019.

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