

Understanding customers' discontinuance intention toward curated subscription commerce via the expectation disconfirmation theory

透過期望失驗理論瞭解顧客對策劃式訂閱商務的不持續意圖

Yu-Hsin Chen

Department of Marketing and Distribution Management, National Kaohsiung University of Science and Technology

Chia-Chien Liu

Department of Business, National Open University

Ching-Jui Keng¹

Department of Business Management, Taipei Tech

Abstract: The service model of curated subscription boxes is a new type of subscription commerce that provides an innovative way of shopping to meet consumers' buying experience. Drawing on the expectancy disconfirmation theory, this research sets up a model to explore the effect of consumers' subscription outcome expectations on their discontinuance intention of curated subscription boxes and proposes three types of subscription expectations: utilitarian outcome expectation, hedonic outcome expectation, and subscription value. The three types should impact the disconfirmation and internal psychological states (regret and dissatisfaction) of consumers, which in turn motivate them unsubscribe. We also consider whether self-concept clarity, an individual trait regarding transparency of self-beliefs, influences one's intention toward discontinuing a subscription. With collected data from 232 subscribers of children's book subscription boxes in Taiwan, we analyze the findings using a structural equation model. The results

¹ Corresponding author: Ching-Jui, Keng, Department of Business Management, Taipei Tech.
Email: cjkeng@ntut.edu.tw.

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reveal that utilitarian outcome expectation, hedonic outcome expectation, and subscription value all positively influence disconfirmation. However, disconfirmation leads to consumer regret and dissatisfaction and further impacts consumers' intention toward discontinuing a subscription. Interestingly, the impact of self-concept clarity on intention to discontinue a subscription is insignificant. Lastly, theoretical and practical implications of this study are discussed.

Keywords: Curated subscription boxes, expectancy disconfirmation theory, self-concept clarity, children's book subscription, discontinuance subscription intention.

摘要：策展式訂閱盒服務模式是一種新型的訂閱商業模式，以創新的購物方式滿足消費者的購物體驗需求。本研究根據期望失驗理論，建立模型探討消費者的訂閱期望對策展式訂閱盒的取消訂閱意圖之影響，並提出了三種類型的訂閱期望：功利性結果期望、享樂性結果期望和訂閱價值。這三種類型的期望會影響消費者的不確認和內部心理狀態（後悔和不滿意），進而促使他們取消訂閱。我們還考慮了自我概念清晰度，這是一種關於自我信念透明度的個人特質，影響個人對於取消訂閱意圖的看法。透過蒐集台灣 232 名兒童書籍訂閱盒的訂閱者數據，使用結構方程模型進行分析。結果顯示，功利性結果期望、享樂性結果期望和訂閱價值都會正向影響不確認。然而，不確認會引起消費者的後悔和不滿意，進而影響消費者取消訂閱的意圖。有趣的是，自我概念清晰度對取消訂閱意圖的影響是不顯著。最後，本研究討論理論和實務上的意涵。

關鍵詞：策展式訂閱盒、期望失驗理論、自我概念清晰度、兒童書籍訂閱、取消訂閱意圖

1. Introduction

Subscription services have become the best way in recent years to manage long-term customer relationships and to understand customer preferences (Lee *et al.*, 2019; Sebald and Jacob, 2020). Indeed, an estimated 75% of direct-to-

consumer brands is engaged in the subscription service market (Choi *et al.*, 2021; Moore, 2020). A survey of shoppers found that one in five during the COVID-19 pandemic purchased a subscription box (Moore, 2020). Subscription box services are a common business model in several industries, such as cosmetics boxes (Birchbox), clothing boxes (Stitch Fix and Trunk Club), food boxes (Blue Apron), and children's book boxes (Amazon and Corinna Norrick-Rühl) (Proulx, 2016).

Curated subscription box (CSB) services help satisfy customers' personalized needs and create surprises as a bonus (Bischof *et al.*, 2020; Toteva, *et al.* 2021). The children's book publishing industry has also quickly adopted subscription services in the format of subscription boxes; for example, Amazon launched the Prime Book Box for Kids in 2017 (Noorda, 2019). Book subscription boxes fall into the curated subscription category, where both curated content and surprise elements are key to the box's appeal. The focus of this study is on children's picture book curated subscription boxes (for children under 12) in Taiwan, taking Grimmpress Company, which recently launched Lovebookbox for Kids, as the case study.

Most studies focusing on subscription boxes in the subscription commerce field are based on existing curation types, consumer motives, and subscription adoption intentions (Johnson *et al.*, 2021; Lee *et al.*, 2019; Savary and Dhar, 2020; Sebald and Jacob, 2020; Tao and Xu, 2018). Despite several previous studies on subscription services, scant attention has targeted the potential influence from a discontinuance of subscription intention that occurs in subscription boxes. Another consumption phenomenon of subscription services is that consumers often continue to pay for services they do not want or need (Dorman, 2018). Consumers' experience with any product or service is an essential determinant of their intentions to continue using, and negative experiences result in dissatisfaction that causes discontinuous intentions. Dissatisfaction can have more extreme, more immediate, and longer-lasting effects than satisfaction (Che *et al.*, 2022). Thus, a unique opportunity exists to examine the discontinuance intentions of customers regarding CSB from the perspective of dissatisfaction.

According to the expectation disconfirmation theory (EDT), negative

disconfirmation lowers the positive attitude of consumers, who then form a sense of dissatisfaction and eventually discontinue any subsequent use (Bhattacharjee, 2001). The literature has applied EDT to various contexts to study consumer satisfaction, experience, and behavior intention (Che *et al.*, 2022; Tzeng *et al.*, 2021). However, EDT research focusing on subscription service dissatisfaction and discontinuance subscription intention is lacking. This study applies EDT to understand and disentangle subscription box service regret, dissatisfaction problems, and discontinuance subscription intention, whereby expectation disconfirmation describes consumers' internal evaluations of the subscription service experience. We consider children's picture book subscription box services in the literature, because book subscription boxes are gaining popularity in the emergent market of subscription boxes, yet are less examined in the commerce literature. Studies on children's picture book subscription box services are primarily qualitative in nature (Noorda, 2019), focusing on investigating what makes such subscription boxes succeed and why they appeal to readers.

Another important idea is self-concept clarity (SCC), which is a construct for understanding consumer choice. In a related study, Savary and Dhar (2020) found that consumers' self-concept structure affects the meaning of subscription choice. However, consumers need to understand the extent to which their own self-concept is clear, as this may influence their buying behaviors. SCC refers to individuals' beliefs that their self-concepts are clearly and confidently defined, internally consistent, and temporally stable (Campbell *et al.*, 1996). In particular, SCC affects subscription preferences (Campbell, 1990), meaning how being uncertain about one's self-concept will increase the likelihood of keeping or discontinuing subscriptions. Discontinuance occurs when subscription choices signal a change in identity, and such SCC affects consumers' motivation to maintain a stable self-concept and to avoid a change in identity (Savary and Dhar, 2020).

Given the increasing importance of subscription boxes and the call for better understanding of how to prevent the discontinuance of subscription services, the aim of this study is to first explore the discontinuance intentions of customers regarding CSB from a dissatisfaction perspective for subscription services. This

study analyzes customers' subscription outcome expectations through utilitarian outcome expectations, hedonic outcome expectations, and subscription value, which influence disconfirmation through the lens of the expectancy disconfirmation theory. Second, customers' disconfirmation for children's picture book subscription boxes raises customer regret, dissatisfaction, and the degree of discontinuance intentions. Finally, this study looks to understand discontinuance of subscription intention according to the SCC of customers' personal characteristics.

The results of this study fill a gap in the consumer behavior literature regarding retail book subscriptions and help companies in their endeavors to excel in this new retail subscription commerce. Our research contributes in several ways. First, to the best of our knowledge it is the first study that focuses on the effect of CSB on discontinuance subscription intention under the specific context of book subscription service. Second, this study develops a framework of the CSB discontinuance intention, thus responding to calls for the development of an enhanced understanding of CSB services (Johnson *et al.*, 2021; Warrillow, 2015). Overall, our findings help advance the knowledge regarding the influence of discontinuance intentions on customers' CSB service, offering an important addition to the literature. Third, this study demonstrates that customers' SCC does not affect the discontinuance of subscription intentions. Finally, based on our structural equation modeling results, this study identifies important differences in the association between disconfirmation and the resultant discontinuance of subscription intention, thereby generating important strategic implications.

2. Component theories of the integrated model

2.1 Curated subscription box

The subscription service model has become a mainstream phenomenon for retailers by providing information products and services (Bischof *et al.*, 2020; Research and Markets, 2020). Subscription commerce services can be divided into three types: consumption, supplemental, and curated (Lehmann, 2020). Curated

subscription box (CSB) has the advantage of being a subscription commerce service (Mimoun *et al.*, 2015; Rudolph *et al.*, 2017; Sebald and Jacob, 2018; Toteva, *et al.* 2021) and is growing rapidly - for example, fashion subscription box services (Bhatt, 2018; Tao and Xu, 2018; Woo and Ramkumar, 2018). In addition, CSB services help gather feedback from customers, informing the service providers of their preference and satisfaction of personalized needs. In particular, consumers anticipate unexpected products in subscription boxes (Bray *et al.*, 2021).

The most popular categories for subscription boxes are food, beauty, apparel, lifestyle, and pet supplies (Hitwise, 2020), but book subscription boxes are also gaining popularity. Publishers prefer adopting them, as subscription boxes benefit from a known customer base and offer stable income. While customers do not know what they will receive under CSB services, they may be attracted by the exploratory feature of such subscription services (Rudolph *et al.*, 2017; Woo and Ramkumar, 2018). Furthermore, the sense of surprise brought by CSB can customize the consumption experience, because the surprise is unique to each customer (Gupta *et al.*, 2020). Noorda (2019) suggested that surprises are the key to children's book subscription box appeal and value. With only a small cohort of academic researchers dedicated to subscription boxes, this paper focuses on a new form of consumption that is mainly based on the curation experience - namely, children's picture book subscription boxes. Therefore, the theoretical analysis framework of this study is primarily based on consumer behaviors and marketing perspectives, in order to fill the gap in the literature on subscription boxes' discontinuance intention.

2.2 Expectation-disconfirmation theory

Oliver (1993) proposed the expectation disconfirmation theory (EDT), which explains the formation of consumer satisfaction through a comparison of expectation and performance in services and products. In other words, consumers judge satisfaction/dissatisfaction responses with a product or service based on a comparison of their pre-purchase expectations and cognitive experiences or

outcomes. Better than expected outcomes lead to positive disconfirmation, while worse than expected outcomes incur negative disconfirmation (Che *et al.*, 2022). Disconfirmation is a subjective post-use comparison that possibly results in a person's thinking performance being better than, worse than, or the same as expected (Lankton and McKnight, 2012). Being better than expected will lead to positive uncertainty, whereas being worse than expected will bring about negative uncertainty (Kopalle and Lehmann, 2001). Positive uncertainty strengthens consumers' attitudes towards services/products (Erevelles and Leavitt, 1992). According to EDT, consumer feels disconfirmation when comparing expectation and performance, which manifests in three outcomes: (1) performance is better than the expectation (positive disconfirmation); (2) performance is the same as the expectation (confirmation); and (3) performance is worse than the expectation (negative disconfirmation) (Yu *et al.*, 2020). Thus, positive disconfirmation leads to satisfaction, and negative disconfirmation leads to dissatisfaction.

Although EDT has been widely applied to understand consumer satisfaction, post-purchase behaviors, and post-adoption behaviors in marketing and psychology (Che *et al.*, 2022; Cho, 2017; Qazi *et al.*, 2017), few studies have employ EDT to scrutinize the role of consumers' subscription expectations in their discontinuance subscription intention under the context of subscription box services. This study applies EDT in regard to CSB to determine whether expectation outcomes exert an impact upon disconfirmation and discontinuance subscription intention.

2.3 Self-concept clarity

Self-concept clarity (SCC) reflects the extent to which the contents of an individual's self-concept are clearly and confidently defined, internally consistent, and temporally stable (Campbell *et al.*, 1996; Fazli-Salehi *et al.*, 2021; Soneji *et al.*, 2015). SCC is based on personality and processes the level of sensitivity to the social environment to help understand or clarify who a person considers him/herself to be. Thus, SCC reflects a structural aspect of the self-concept, which is different from, but related to, the content dimension of self-concept. Examining

SCC contributes to comprehending how attitude and consumption represent a way of expressing oneself to the outside world (Zheng *et al.*, 2018).

Most studies about SCC are in the areas of psychology and sociology, while studies connecting SCC with consumption and purchase behaviors are recent and not large in number (Fazli-Salehi *et al.*, 2021; Zheng *et al.*, 2018). Individuals may have a high or low level of SCC, which can be studied as a valuable structure in consumer behavior research (Noguti and Bokeyar, 2014). Campbell *et al.* (1996) developed the SCC scale to evaluate the consistency of personal perception. Campbell (1990) found that individuals with low SCC are susceptible to influence and dependence in the social environment. Low SCC consumers are likely to generate self-reaction when confronting uncertainty (Noguti and Bokeyar, 2014). As people with low SCC do not have clear cognizance of who they are, they will seek external factors to guide them (Soneji *et al.*, 2015; Zheng *et al.*, 2018). Compared to consumers with low SCC, consumers with high SCC are less inclined to be affected by a current situation, meaning their self-knowledge structures are so clear that they are more capable of making cognitive-based purchases or brand selections (Fazli-Salehi *et al.*, 2021).

Under the circumstance of subscription service selection, consumers often face a choice to keep or cancel a subscription service. It can be assumed that a consumer's choice to withdraw from a current subscription probably indicates that the person's identity has changed, because this action possibly manifests that the consumer is giving up a valuable goal or self-view (Savary and Dhar, 2020). As the change of personal identity involved in subscription selection is different from that of traditional one-time product consumption, canceling a current subscription or registering a new subscription is a sign of identity change that may threaten the stability of the consumer's self-concept. Therefore, low SCC will increase consumers' motivation to maintain the stability of their self-concept, meaning those with lower SCC are more inclined to retain unused subscriptions than those with higher SCC (Savary and Dhar, 2020). Therefore, this study argues that the extent to which self-concept is clear will be seen through influential unsubscription choices.

3. Research hypotheses development

3.1 Utilitarian and hedonic outcome expectations

Outcome expectations refer to the expected consequences of one's own behaviors (Compeau and Higgins, 1995a, b). Individuals' expectations regarding the outcome of their ability to use computers are typically viewed in two forms: utilitarian and hedonic outcome (Chang *et al.*, 2014). While the CSB commerce model can differ greatly from company to company, two common experiences are shared and categorized into utilitarian and hedonic dimensions (Tao and Xu, 2018). For example, consumers using CSB services can save time and take advantage of convenience, customization, free shipping, as well as discounts offered by the subscription retailers (Longanecker, 2015). Moreover, surprises are a key factor in the subscription box experience (Rudolph *et al.*, 2017). Curated surprise subscriptions are defined as customized boxes with surprise items at automatic regular intervals (Warrillow, 2015). CSB is a combination of surprises, personalization, and customization (Noorda, 2019). As customers of a surprise box do not know what they are going to receive, the surprise can customize the consumption experience, because the surprise is idiosyncratic and unique to each individual consumer (Gupta *et al.*, 2020).

Mimoun *et al.* (2015) studied the consumption experience of consumers using subscription commerce to receive cosmetic boxes from the aspects of extrinsic and intrinsic values. Woo and Ramkumar (2018) found that utilitarian and hedonic motivations affect consumers' favorable attitudes toward beauty and fashion subscription box services. Thus, this study extends the concept of outcome expectations to include both utilitarian and hedonic outcome expectations in the context of CSB commerce.

This study focuses on utilitarian and negative hedonic outcomes as the main concepts to identify consumer disconfirmation. Utilitarian outcome relates to goal-oriented outcome expectations, defined as the degree to which children's picture book curated subscription boxes can enhance consumers' shopping performance. Hedonic outcome relates to personal outcome expectations, defined

as the expectations associated with the surprise of children's picture book curated subscription boxes that may result in different forms of enjoyment. When the subscribers perceive low utilitarian outcome expectations and low hedonic outcome expectations, they show negative feelings toward overall utilitarian and hedonic outcomes, which may increase their disconfirmation. Therefore, the following hypotheses are proposed.

Hypothesis 1. Negative utilitarian outcome expectation positively impacts disconfirmation.

Hypothesis 2. Negative hedonic outcome expectation positively impacts disconfirmation.

3.2 Subscription value

Perceived value in marketing is defined as consumers' subjective evaluation of the trade-off between the benefits obtained from a product or service and the sacrifices made for it (Zeithaml, 1988). Generally speaking, it involves the discrepancy between the benefits they earn and the cost they must pay (Zhang *et al.*, 2017). Individual analysis of the perceived value is one way to evaluate the experience (Mimoun *et al.*, 2015); more precisely, perceived value is a "preferential, interactive, relative, personal, and situation experience" (Holbrook, 1999). Tao and Xu (2018) found that consumers perceive strong relative advantages, including convenience, personalization, consumer excitement, opportunities to try new styles, and opportunities for budget management by using fashion subscription retailing.

In children's picture book curated subscription boxes, when customers convey their interests, image preferences, and type of stories to the service provider, selected picture books will be delivered in a box to their doorstep. The time saved from not needing to shop online or perusing physical bookstores to find children's picture books is noted by customers. Moreover, subscription services may give consumers the opportunity to try products that they would not typically try (Tao and Xu, 2018). This study defines subscription value as the process of subscription consumption, meaning subscribers' perceived preference for and

evaluation of the attributes of children's picture book curated subscription boxes will facilitate achieving their goals and purposes in subscription use situations. When subscribers perceive negative subscription value of the children's picture book curated subscription boxes, it might result in subscribers' disconfirmation. Therefore, this study proposes the following.

Hypothesis 3. Negative subscription value positively impacts disconfirmation.

3.3 Disconfirmation

Consumers' post-purchase satisfaction is determined by the disconfirmation between expectation and actual service performance (Cho, 2017). In the EDT model, disconfirmation can be consumers' subjective perceptions of the discrepancy between their original expectations and perceived performance, and it directly affects consumer satisfaction (Oliver, 1993); therefore, disconfirmation is a good predictor of overall satisfaction. Specifically, positive disconfirmation (i.e., performing above expectations) increases consumer satisfaction, while negative disconfirmation (i.e., performing below expectations) reduces consumer satisfaction (Shen *et al.*, 2018).

Several authors have shown that disconfirmation of customer expectations affects customer satisfaction. For example, Che *et al.* (2022) noted that website and service disconfirmation positively relate to consumer dissatisfaction in the O2O context. Tzeng *et al.* (2021) mentioned that disconfirmation positively affects overall satisfaction of Singles' Day shopping in China. Ariffin *et al.* (2021) presented that disconfirmation has a significant impact on customer satisfaction toward the intention to continue the use of e-wallets. In addition, Huang *et al.* (2019) confirmed that lower confirmation increases users' degrees of regret. Gillison and Reynolds (2018) indicates that negative search disconfirmation mediates the relationship between search effort and shopper search regret.

In children's picture book subscription boxes, disconfirmation likewise means that subscribers have experienced larger discrepancies than expected, thereby increasing their degrees of regret and dissatisfaction toward their children's picture book subscription boxes. This study defines disconfirmation as

follows: after subscribers receive children's book subscription boxes, their subjective perceptions of disconfirmation are based on the discrepancy between their original expectations and perceived performance. Thus, the following hypotheses are proposed.

Hypothesis 4. Disconfirmation positively influences dissatisfaction.

Hypothesis 5. Disconfirmation positively influences regret.

3.4 Regret and dissatisfaction

Regret is an outcome of external comparisons with other alternatives and associated with action tendencies to leave current situations in order to correct mistakes (Zeelenberg *et al.*, 2000). Sun *et al.* (2014) noted regret is a negative emotion as a result of decision-making under uncertainty in the presence of alternatives. Regret occurs when users make external comparisons between the current chosen option and other-object referents when multiple choices are present - that is, the reference point for regret is from an external comparison between current and other options (Wu and Chang, 2019). Nawaz *et al.* (2018) discussed how regret influences the dissatisfaction level of customers and observed that regret is positively associated with a user's social networking sites' discontinuance intentions. Huang *et al.* (2019) found regret decreases satisfaction and positively influences a user's discontinuance intention toward a specific gamification application.

This study extends the EDT perspective by incorporating regret so as to provide a holistic understanding of the influences on subscribers' discontinuance intentions. In the context of this study, when comparing other children picture books' purchase forms, subscribers will increase their dissatisfaction and discontinuance subscription intention if they have higher regret toward the current children's picture book subscription boxes due to an external comparison with other purchase forms. Therefore, this leads to the following hypotheses.

Hypothesis 6. Regret positively impacts discontinuance subscription intention.

Hypothesis 7. Regret positively impacts dissatisfaction.

EDT is widely used to study consumer satisfaction/dissatisfaction and behavior intention (Che *et al.*, 2022). It explains user satisfaction as an essential index that measures users' feelings after using a product. As a psychological state, satisfaction refers to the result of the comparison between expected and actual performances; satisfaction is confirmed when a product/service performance meets the expectations of a user (McKinney *et al.*, 2002), and the inverse results in dissatisfaction (Tsiros, 1998). While mysterious boxes can create surprising and pleasant consumer experiences, they can also lead to consumer awareness that a product or service may not be needed, meaning it causes consumer cognitive dissonance and dissatisfaction (Johnson, 2021). While satisfaction can strongly influence continuance use intentions (Cho, 2017), dissatisfaction is conversely more likely to cause users' discontinuance intentions (Huang *et al.*, 2019; Nawaz *et al.*, 2018). This study argues that dissatisfaction increases discontinuance intentions. Therefore, this study offers the following hypothesis.

Hypothesis 8. Dissatisfaction positively impacts discontinuance subscription intention.

3.5 Self-concept clarity

This paper examines the role of self-concept clarity, which concerns how sure a person is of oneself (Schwartz *et al.*, 2011). Individuals with high SCC levels tend to have more certain, confident, and positive self-concepts, while individuals with low SCC seek levels external cues when making decisions (Burger and Guadagno, 2003), and they are susceptible to product recommendations (Lee *et al.*, 2010), advertisements (Soneji *et al.*, 2015), and materialism (Fazli-Salehi *et al.*, 2021). Moreover, when faced with uncomfortable situations, people with a clear self-concept tend to take action, while those with a low self-concept tend to be passive, disengaged, or in denial when faced with chaotic or difficult situations (Smith *et al.*, 1996). Prior studies have indicated that a consumer's SCC will affect subscription choices (Savary and Dhar, 2020), and consumers with low SCC are more likely to retain identity-relevant subscriptions when compared to those with high SCC. In addition, Qian and Park (2021) revealed that the effect of poor fit on

dissatisfaction is moderated by SCC - that is, those with clearer self-beliefs and knowledge tend to more strongly react to perceived poor fit. Fazli-Salehi *et al.* (2021) found that SCC has a negative impact on materialism and brand connection. Therefore, this study hypothesizes the following.

Hypothesis 9. Disconfirmation negatively influences self-concept clarity.

Hypothesis 10. Self-concept clarity negatively influences discontinuance subscription intention.

Based on the prior discussion, the research model proposed is shown in Figure 1.

4. Methodology

4.1 Sampling and data collection

Before administering the questionnaire, a pilot study (n= 51) was conducted for three weeks via online surveys. As no major problems were found, the questionnaire was revised to address minor issues associated with a few measurement items, in order to further improve the readability of the respondents.

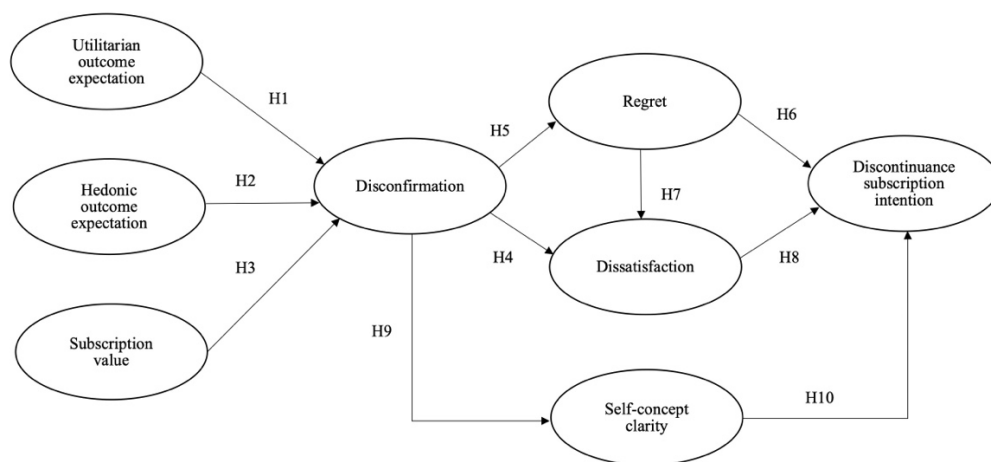


Figure 1
Conceptual model

The survey was hosted and distributed by Grimmpress Company's Lovebookbox platform (www.lovebookbox.com), which provides online survey services. Lovebookbox.com allows customers to fill out a simple online demand quiz. The recommendation system uses artificial intelligence to formulate customized children's picture book subscription boxes for one's child. Customers can use the subscription method to provide monthly, quarterly, and annual subscription prices. To ensure data quality, this study used Lovebookbox platform's paid subscribers, sending emails to registered members who did not renew or to old customers who had unsubscribed and inviting them to fill out the questionnaires. When members replied to the invitation and completed the questionnaire, the platform gave cash rewards to respondents. The sampling process was conducted from April to June 2022. This study received a total of 250 responses to the survey from those who have subscribed to the Lovebookbox subscription service and removed cases with missing data and outliers, for a final sample of 232 valid responses and a valid response rate of 92.8%.

Table 1 presents the sample profile. The participants are 6.9% male and 93.1% female. In terms of age, the majority of the respondents are young, those aged 30 to 34 account for 39.7% of the sample, followed by respondents aged 35 to 39, accounting for 34.1% of the sample. Most respondents have a bachelor's degree (69.4%), and 83.6% of respondents are in the monthly and quarterly subscription program. Children's book subscription box purchasers tend to be women between 24 and 45 years old. The demographics of purchasers include mothers, grandmothers, aunts, teachers, and librarians (Noorda, 2019). Children's book subscription boxes are quite attractive for busy consumers, because they often do not have time to sift through new releases to determine which ones are the best and receive recommendations for new great books.

4.2 Questionnaire design and measures

Most instruments used to measure the constructs in this study are adapted from other studies in order to ensure content validity. We use multi-item measures with a seven-point Likert-style scale (1 = strongly disagree, 7 = strongly agree).

Table 1
Demographics

Demography		Full samples (n=232)	
		Numbers	%
Gender	Male	16	6.9
	Female	216	93.1
Age (years)	20-24	19	8.2
	25-29	3	1.2
	30-34	92	39.7
	35-39	79	34.1
	≥ 40	39	16.8
Education	High school	8	3.4
	Bachelor degree	161	69.4
	Master's degree	61	26.3
	PhD degree	2	0.9
Subscription program	Per month	148	63.8
	Per quarterly	46	19.8
	Per year	38	16.4

The measurement items in this study are all negatively described. The utilitarian outcome measure is calculated according to Lankton and McKnight (2012), and the hedonic outcome measure is adapted from Chang *et al.* (2014). The subscription value measure is measured according to Sweeney and Soutar (2001). Self-concept clarity is measured using a scale proposed by Campbell *et al.* (1996). The negative disconfirmation measure is developed by adopting the measurements of Qazi *et al.* (2017). The items measuring regret and dissatisfaction are taken from Nawaz *et al.* (2018). The discontinuance subscription intention measure is evaluated according to other research on discontinuance intention (Huang *et al.*, 2019).

5. Results

The study conducts data analysis using the structural equation modeling technique of partial least squares (PLS) with SmartPLS 3.3. Bootstrapping is applied to approximate data normality and to determine the significance of the structural paths using t-tests. The percentile bootstrap procedure employing the

partial least squares algorithm in this study is performed on 5,000 samples.

5.1 Measurement model assessment

Table 2 summarizes the properties of the measurement model. We remove 4 original items with factor loadings less than 0.6 and other factor loadings over the cutoff value of 0.60 (Chin, 1998) and significant at 0.05. Cronbach's alphas range between 0.876 and 0.936, suggesting adequate convergence (Hair *et al.*, 2013). Composite reliability (CR) estimates are greater than 0.70, and average variance extracted (AVE) values are greater than 0.50, supporting internal consistency (Hair *et al.*, 2017). All calculated estimates meet these stipulated criteria, providing internal consistency evidence. According to Kock (2015), full collinearity VIF can also be used for common method bias testing. We also delete 3 original items that do not meet the VIF standard value of less than the 3.3 threshold. Other none of the VIF values are above this benchmark, suggesting that no significant multicollinearity problem exists with regard to our dataset.

Tables 3 and 4 present the assessments of the discriminate validity. As Table 3 shows, the correlation coefficient between each construct must be less than 1 (Bagozzi *et al.*, 1991). The correlations between each pair of constructs do not exceed AVE's square root for any single construct, thereby confirming the model's discriminant validity (Fornell and Larcker, 1981; Gaski and Nevin, 1985). Furthermore, Table 4 results demonstrate that the HTMT values of all constructs range from 0.212 to 0.896 and are less than the recommended level of 0.9 (Henseler *et al.*, 2015).

Harman's single-factor test is the most common test used to examine common method variance (Podsakoff *et al.*, 2003). We perform the test in SPSS using principal component analysis. EFA is then conducted with the extraction factor fixed to a single factor. The first factor accounts for 21.084% of the variance, which indicates that no common method bias exists. The data are all acceptable for validating the proposed research model.

Table 2
Reliability and validity analysis for the full sample

Construct	Indicator	Factor loading	VIF	Cronbach's α	CR	AVE
Utilitarian outcome expectation (UOE)	UOE1	0.833***	1.773	0.831	0.888	0.666
	UOE2	0.857***	2.223			
	UOE3	0.852***	2.239			
	UOE4	0.713***	1.435			
Hedonic outcome expectation (HOE)	HOE1	0.854***	1.985	0.873	0.922	0.797
	HOE2	0.898***	2.621			
	HOE3	0.925***	2.811			
Subscription value (SV)	SV1	0.866***	2.785	0.909	0.936	0.785
	SV3	0.876***	2.794			
	SV4	0.904***	2.820			
	SV5	0.877***	2.595			
	Self-concept clarity (SCC)	SCC1	0.619***			
SCC2	0.629***	1.555				
SCC3	0.617***	1.440				
SCC4	0.737***	1.938				
SCC5	0.727***	1.777				
SCC8	0.620***	1.587				
SCC9	0.662***	1.576				
Disconfirmation (DCON)	DCON1	0.881***	1.718	0.785	0.902	0.821
	DCON3	0.930***	1.718			
	Regret (REG)	REG1	0.938***			
REG3	0.924***	2.179				
Dissatisfaction (DSAT)	DSAT1	0.875***	2.476	0.910	0.936	0.787
	DSAT2	0.885***	2.780			
	DSAT3	0.882***	2.681			
	DSAT4	0.906***	3.050			
Discontinuance subscription intention (DSI)	DSI1	0.914***	2.763	0.887	0.930	0.816
	DSI2	0.920***	3.004			
	DSI3	0.875***	2.206			

Note(s): *** $p < 0.001$.

5.2 Structural model assessment

Figure 2 illustrates the main effects. The path coefficients for the research constructs are expressed here in standardized form. The variance explained by

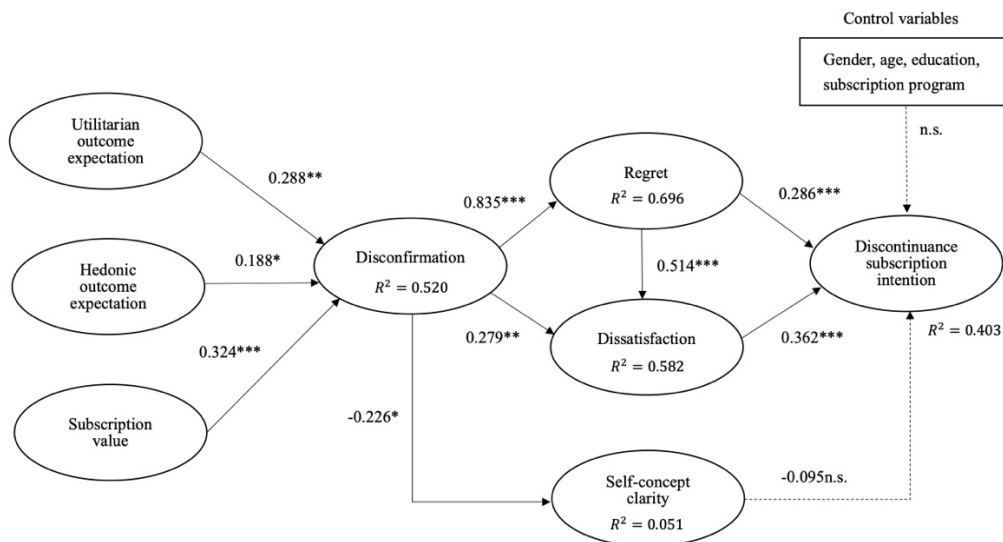
Table 3
Analysis of discriminant validity for the full sample

Construct	M	SD	Correlations and square roots of AVE								
			UOE	HOE	SV	SCC	DCON	REG	DSAT	DSI	
UOE	5.72	0.924	0.816								
HOE	5.72	1.018	0.731	0.893							
SV	5.45	0.992	0.697	0.721	0.886						
SCC	4.24	0.949	-0.251	-0.215	-0.286	0.627					
DCON	2.65	1.179	0.652	0.633	0.660	-0.222	0.906				
REG	2.30	1.189	0.623	0.631	0.621	-0.182	0.835	0.931			
DSAT	5.80	1.084	0.551	0.596	0.518	-0.217	0.708	0.747	0.887		
DSI	5.15	1.115	0.423	0.457	0.447	-0.220	0.536	0.575	0.597	0.903	

Table 4
Heterotrait-Monotrait Ratio (HTMT)

Construct	Heterotrait-Monotrait Ratio (HTMT)							
	UOE	HOE	SV	SCC	DCON	REG	DSAT	DSI
UOE								
HOE	0.857							
SV	0.798	0.793						
SCC	0.297	0.242	0.326					
DCON	0.788	0.747	0.762	0.274				
REG	0.733	0.725	0.697	0.212	0.896			
DSAT	0.626	0.661	0.560	0.238	0.824	0.846		
DSI	0.488	0.514	0.491	0.260	0.636	0.661	0.661	

discontinuance subscription intention is 40.3%. As Table 5 shows, there are significantly positive effects of the utilitarian outcome expectation ($\beta = 0.288$, $t = 3.333$, $p < 0.01$), hedonic outcome expectation ($\beta = 0.188$, $t = 2.162$, $p < 0.05$), and subscription value ($\beta = 0.324$, $t = 4.059$, $p < 0.001$) on disconfirmation. Hence, H1, H2, and H3 are supported. Furthermore, dissatisfaction ($\beta = 0.279$, $t = 3.625$, $p < 0.001$) and regret ($\beta = 0.835$, $t = 34.621$, $p < 0.001$) are positively affected by disconfirmation. Therefore, H4 and H5 are supported. Regret ($\beta = 0.286$, $t = 3.487$, $p < 0.001$) and dissatisfaction ($\beta = 0.362$, $t = 4.395$, $p < 0.001$) positively contribute to the discontinuance subscription intention of the user. Moreover, regret has significantly positive effects on user dissatisfaction ($\beta = 0.514$, $t = 5.773$, $p < 0.001$), meaning that regret contributes to the level of dissatisfaction and its impact on later outcomes. Thus, H6, H7, and H8 are supported.



Notes: ns = non-significant. * $p < 0.05$, ** $p < 0.01$, and *** $p < 0.001$.

Figure 2
PLS results for the full sample of the research model

Table 5
Hypothesized model results

Hypothesis	Standardized Coefficient	t-value	Result
H1: UOE→DCON	0.288	3.333**	Supported
H2: HOE→DCON	0.188	2.162*	Supported
H3: SV→DCON	0.324	4.059***	Supported
H4: DCON→DSAT	0.279	3.625**	Supported
H5: DCON→REG	0.835	34.621***	Supported
H6: REG→DSI	0.286	3.487***	Supported
H7: REG→DSAT	0.514	5.773***	Supported
H8: DSAT→DSI	0.362	4.395***	Supported
H9: DCON→SCC	-0.226	2.964*	Supported
H10: SCC→DSI	-0.095	1.855n.s.	Not supported

In the consumers' SCC section, disconfirmation has a significantly negative effect on SCC ($\beta = -0.226$, $t = 2.964$, $p < 0.05$), thus supporting H9. Surprisingly,

the effect of self-concept clarity on discontinuance subscription intention is non-significant ($\beta = -0.095$, $t = 1.855$, $p > 0.05$). Thus, H10 is not supported. Finally, the control variables indicate no significant effect on discontinuous intention.

6. Conclusions and implications

6.1 Discussion

This study presents a comprehensive research model drawing from EDT perspectives in order to examine consumers' subscription expectations, consumer traits, and processes involved in the intention to discontinue a subscription box service. First, among all factors influencing disconfirmation, the construct of subscription value is the strongest one, followed by utilitarian outcome expectation and hedonic outcome expectation.

Second, the results indicate that disconfirmation directly leads to regret and dissatisfaction, which consequently influence the discontinuance of subscription intentions. These direct effects are consistent the EDT literature regarding the service and commerce contexts (Che *et al.*, 2022).

Third, regret and dissatisfaction are key psychological factors in the development of discontinuance intention. Dissatisfaction has been demonstrated to be a crucial determinant in predicting discontinuous intention (Che *et al.*, 2022). Our study also highlights the important role of regret in subscribers' discontinuance intention, especially in contexts in which subscribers have an unpleasant experience and produce negative emotion (Huang *et al.*, 2019; Wang *et al.*, 2021). Disconfirmation is a result of internal comparison, while regret is a result of external comparison. When CSB services provide customers with a consumption experience worse than their expectation, the abandoned alternative provides better results than the current choice, which possibly leads to an increase in negative and unpleasant emotions and subsequently generates an interruption intention of the current product/service.

Finally, disconfirmation negatively influences the degree of SCC, but the predictive power is somewhat weak. However, and unexpectedly, consumers' SCC

has no significant and direct effect on discontinuance subscription intention. This may be due to the current research on children's picture book curated subscription boxes only providing different subscription price plans and having nothing to do with membership status. SCC does not affect subscriptions for products that are not identity-relevant or one-shot subscription choices that are less associated with consumers' identities (Savary and Dhar, 2020).

6.2 Theoretical implications

This study provides several important theoretical implications. First, it advances the literature in the area of subscription services, specifically related to children's picture book curated subscription boxes, by experimentally testing CSB, whereas other studies related to children's picture book curated subscription boxes mainly focus on the surprise given by subscription boxes (Noorda, 2019). Second, this study is the very first to contextualize EDT to the context of CSB and to focus on discontinuance subscription intention.

Third, this study identifies that utilitarian outcome expectation, hedonic outcome expectation, and subscription value are associated with disconfirmation in CSB services. Finally, this study confirms that SCC has no influence on discontinuance subscription intention. This result is different from the verification proposed by others (Savary and Dhar, 2020). However, Qian and Park (2021) suggested that canceling a current subscription or signing up for a new subscription signals a change in identity that threatens the stability of the self-concept. The results of this study help extend the EDT and SCC literature and present a theoretical lens for future studies of CSB services.

6.3 Practical implications

This study also has some implications for CSB service practices. First, in order to ensure that children's picture book curated subscription boxes allow customization and personalization, managers should collect feedback from readers in various ways, such as surveys and correspondence via emails and social media platforms (Facebook/Instagram). The most important point is to not provide

duplicate books, but rather to create a sense of freshness that satisfies consumers' curiosity and enthusiasm, while avoiding the loss of their psychological value of goods, which will result in a decreased customer base. In addition, book subscription box retailers can differentiate themselves by varying the curation type, such as full curation, partial curation, and no curation.

Second, companies can consider implementing online reviews on their book subscription box websites, which can be used as a powerful tool that eliminates any doubt directly on-site (Frichou, 2020). In order to strengthen consumer trust before receiving their subscription boxes, companies should provide information about book content quality and invite celebrities or experts to recommend their products to lessen consumers' levels of uncertainty and cognitive dissonance (Johnson *et al.*, 2021).

Finally, low SCC increases the likelihood of retention when subscriptions are identity-relevant. Service providers can adopt a subscription-tiered membership system, such as free membership, general membership, and prime membership. Consumers with low SCC are motivated to avoid actions that signal a change in their self-concept, as they are more likely to keep identity-relevant subscriptions (Savary and Dhar, 2020).

6.4 Limitation and future research

The current study has certain limitations. First, one relating to the sample stems from the imbalanced gender ratio of respondents, which is predominantly female and limits the generalizability of the findings to broader populations. However, Noorda (2019) found that females make up most of children's picture book subscribers. Second, this study considers those who did not renew or old customers who had unsubscribed in order to ensure internal validity with the most relevant sample for the manipulated factor. Future research could examine differences between existing continuance subscribers and unsubscribers. Lastly, this study focuses only on CSB of children's picture book service, which may limit external validity. Future research could test our model through the inclusion of other types of subscription services, such as predefined, curated, surprise, and

access (Bischof *et al.*, 2020).

Appendix A

Item	Measure
<i>Utilitarian outcome expectation - adapted from Lankton and McKnight (2012)</i>	
UOE1	I use this subscription service, but it does not accomplish what I want.
UOE2	I use this subscription service, but it does not save a lot of time in searching for picture books.
UOE3	I use this subscription service, but it does not enhance shopping efficiency.
UOE4	I use this subscription service, but it does not increase my chances of getting discounted prices.
<i>Hedonic outcome expectation - adapted from Chang et al. (2014)</i>	
HOE1	I use this subscription service, but I do not experience enjoyment.
HOE2	I use this subscription service, but I do not feel pleasure and fun.
HOE3	I use this subscription service, but I do not feel any surprise.
<i>Subscription value - adapted from Sweeney and Soutar (2001)</i>	
SV1	I think using this subscription service to purchase children's picture books is not very good value for one's money.
SV2*	I think the prices of children's picture books purchased using the subscription service are not very good. <i>(deleted)</i>
SV3	I think the prices of children's picture books purchased using this subscription service are not very reasonable.
SV4	I think children's picture books purchased using this subscription service are not worth it.
SV5	I think the value of children's picture books purchased using this subscription service is not equivalent to the price.
<i>Self-concept clarity - adapted from Campbell et al. (1996); Qian and Park (2021)</i>	
SCC1	My beliefs about myself are often in conflict (Reversed).
SCC2	One day I might have one opinion of myself, and on another day I might have a different opinion (Reversed).
SCC3	I spend a lot of time wondering about what kind of person I really am (Reversed).
SCC4	Sometimes I feel that I am not really the person that I appear to be (Reversed).
SCC5	When I think about the kind of person I have been in the past, I am not sure what I was really like (Reversed).
SCC6*	I seldom experience conflict between the different aspects of my personality. <i>(deleted)</i>
SCC7*	Sometimes I think I know other people better than I know myself (Reversed). <i>(deleted)</i>

SCC8	My beliefs about myself seem to change very frequently (Reversed).
SCC9	If I were asked to describe my personality, my description might end up being different from one day to another day (Reversed).
SCC10*	Even if I wanted to, I do not think I would tell someone what I am really like (Reversed). <i>(deleted)</i>
SCC11	In general, I have a clear sense of who I am and what I am.
SCC12*	It is often hard for me to make up my mind about things, because I do not really know what I want (Reversed). <i>(deleted)</i>

Disconfirmation - *adapted from Qazi et al. (2017)*

DCON1	My experience with using this subscription service was worse than what I desired.
DCON2*	The service level provided by this subscription service did not meet a lot of my desired expectations. <i>(deleted)</i>
DCON3	Overall, most of my desired expectations from using this subscription service were disconfirmed.

Regret - *adapted from Nawaz et al. (2018)*

REG1	I feel sorry for choosing this subscription service.
REG2*	I regret choosing this subscription service. <i>(deleted)</i>
REG3	I should have chosen another subscription service.

Dissatisfaction - *adapted from Nawaz et al. (2018)*

DSAT1	I feel dissatisfied with my overall experience using this subscription service.
DSAT2	I feel displeased about my overall experience using this subscription service.
DSAT3	I feel discontented about my overall experience using this subscription service.
DSAT4	I am not delighted by my overall experience using this subscription service.

Discontinuance subscription intention - *adapted from Cao and Sun (2018); Huang et al. (2019)*

DSI1	I intend to stop using this subscription service in the next three months.
DSI2	I predict that I will reduce the use of this subscription service in the next three months.
DSI3	I plan to stop or reduce using this subscription service in the next three months.

Note(s): We deleted SCC6*, SCC7*, SCC10*, and SCC12* items due to their factor loadings lower than 0.6. In addition, we deleted SV2*, DCON2*, and REG2* items due to their VIFs lower than 3.3.

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