

PRE-PURCHASE AND POST-PURCHASE SALES PROMOTIONS ON E-COMMERCE PLATFORMS: THE EFFECTS OF PROMOTIONAL BENEFITS ON CUSTOMER-BASED BRAND EQUITY

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ABSTRACT

This research examines the impacts of electronic commerce platforms' sales promotions' benefits on customer-based brand equity (platform brand awareness and platform brand association) and how these relationships are moderated by the promotion stage. Based on the two functions of sales promotions (stimulation vs. maintenance), we propose a five-benefit framework consisting of exploration, convenience, savings, social bonds and structural bonds. Our results reveal the two functions of sales promotions and the positive effects of the benefits on customer-based brand equity (CBBE). The differences between pre- and post-purchase sales promotions are also significant. We discuss the managerial and theoretical implications of these results at the end.

Keywords: Platform-based sales promotion; Pre-purchase promotion; Post-purchase promotion; Multiple-benefit framework; Customer-based brand equity

1. Introduction

Since its inception, e-commerce has experienced fast growth in China. Because of the prosperity of e-commerce, both large and small businesses have ventured into this marketplace, leading to fierce competition. In order to be more competitive, e-commerce platforms are eager to neutralize their disadvantages and find their distinct advantages. Currently, most e-commerce platforms experience low customer loyalty, where consumers prefer the lowest-priced products among e-commerce platforms instead of being loyal to one e-commerce platform. Low prices are no longer enough for retailers to prosper; they must develop branding strategies to bring more value to consumers (Borkovsky et al., 2017; Kaushik et al., 2020). According to the extant literature, online e-commerce platforms, such as Tmall.com, JD.com, and Suning.com, could be regarded as online retailers or online stores with lots of brands sold in (Burt & Davies, 2010; Jx et al., 2019). What's more, the Global Powers of Retailing annual

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report (Deloitte, 2022) ranks JD.com 9th, Suning.com 31st, Alibaba 42nd, and Vipshop 67th out of 250 global top power retailers. The 2022-2028 Chinese retail industry's marketing development and Investment Strategy Analysis Report (Intelligence Research, 2021) ranks Tmall.com 1st, JD.com 2nd, Pdd.com 3rd, Suning.com 5th, and Vipshop 6th out of 100 Chinese top power retailers. Thus, it is eager for e-commerce platforms' brand managers to build and fortify the platforms' brand as their competitiveness rather than a lower price. According to the extant literature (Aaker, 1996; Bolton et al., 2022; Trigeorgis et al., 2021), a strong brand as an intangible asset can shape a business's competitive advantage, which significantly affects consumers' loyalty and decisions. Hence, it is key for e-commerce platforms to properly assess their brand equity and brand-related activities. Recently, the most successful activities held by e-commerce platforms in China that resulted in significant enhancement of the platform brand reputation and superiority were a large-scale sales promotion dubbed "Double 11" by Taobao.com and Tmall.com and another dubbed "6.18" by JD.com. The large number of brands and sellers on Tmall and JD and their platform-wide sales promotions have drawn the attention of both business practitioners and academic researchers.

Growing marketing pressures, along with attractive market opportunities and technological developments, have induced many e-commerce platforms to leverage their strong brands. Being an intangible asset that can shape a firm's competitive advantage, a strong brand is crucial for customer loyalty, price premium, and long-term brand equity value (Hariharan et al., 2018; Heinberg et al., 2020). Thus, a strong brand is also worth pursuing e-commerce platforms.

For consumers, utilitarian benefits are "rewarding because they help one attain external aims or goals, such as social or economic gain" (Dennis et al., 2013). Because consumers often perceive themselves as busy (Ordun, 2015), they desire shopping convenience and ease of purchase (Jiang et al., 2013). Consequently, finding a way to increase the e-commerce platform's brand equity while reducing the price and improving shopping convenience is a challenge faced by brand managers. Sales promotions, as a component of the marketing mix, have been confirmed to effectively reduce the price and improve shopping convenience. The objective of this research is to examine whether promotions positively affect brand equity on e-commerce platforms.

As brand equity's importance increases, it has attracted researchers' attention. Multiple perspectives on the concept of brand equity exist (Aaker, 1996). However, many researchers focus their attention on the critical role of brand equity in commercial brands, companies, stores, and so on (Wang & Tian, 2009; Burt & Davies, 2010; Massara et al., 2018; Sinha & Verma, 2018), while little research focuses on the development of brand equity that plays a critical role on e-commerce platforms. Furthermore, the common measurements of brand equity consist of three aspects: brand equity as a whole construct, dimensions of brand equity, and variables related to brand equity (Sasmitha & Mohd, 2015; Sürücü et al., 2019). However, the measurement scales of brand equity for an e-commerce platform do not exist. We fill this research gap in by examining the importance of brand equity for e-commerce platforms.

Few studies have combined benefits from pre-purchase and post-purchase promotions to investigate the differences during different stages of a sales promotion on an e-commerce platform. In this study, we introduce two stages of a sales promotion – pre-purchase versus post-purchase sales promotions (Cao & Gruca, 2004). Pre-purchase sales promotions such as advertisements, sale prices, and coupons are given to consumers prior to their purchases and are used to stimulate purchase. In contrast, post-purchase promotions are given to customers after their purchases and are used to maintain the relationship between the consumers and the shopping platform. Examples include Taobao coins (virtual coins that can be used on Taobao and Tmall toward future purchases with sellers who accept them), sweepstakes, and return shipping cost guarantee (to reimburse customers their return shipping charges when they return their purchases).

In addition, there also exists confusion about the relationship between sales promotion and brand equity. Some argue that sales promotion increases customers' price sensitivity and lowers quality perception, thus decreasing brand equity in the long term (Ngobo & Jean, 2012; Abdul & Waheed, 2017; Xue et al., 2019), while others find no negative effects (Davis et al., 1992; Wu & Tian, 2009; Aydinli et al., 2014). Hence, we examine the differential effects of sales promotion on customer-based brand equity (CBBE) by answering the following two research questions:

RQ 1. How do sales promotions on an e-commerce platform affect its CBBE?

RQ 2. Does the stage of a sales promotion moderate its effects on CBBE?

To understand the effects of e-commerce platform sales promotions on CBBE, we identify the benefits consumers receive from sales promotions. Instead of using the benefits framework provided by Chandon et al. (2000), we develop a new five-benefits framework including exploration, convenience, savings, social bonds and structural bonds to explain how sales promotions affect CBBE. We first examine these five benefits in an exploratory study and find them to positively influence the evaluation of sales promotions. We also confirm the two different functions of sales promotions (stimulation and maintenance). Next, based on the new framework, we

develop hypotheses on the positive influences of the five benefits on CBBE in our main study, and find that the differences between brand awareness and brand association are significant. The results show the effects of savings and social bonds benefits are significant on brand association but not on brand awareness. The hypotheses on the positive effects of exploration, convenience and structural bonds on brand awareness and brand association are supported by our results.

The moderating effect of the stage of sales promotions is also important. Our results reveal that the benefits contributing to the enhancement of brand awareness during pre-purchase sales promotions include convenience and structural bonds, while during the post-purchase stage, only exploration benefit contributes to enhancing brand awareness. During the pre-purchase stage, the benefits contributing to the enhancement of brand association include convenience, savings, social bonds and structural bonds, while the benefits contributing to higher brand association during post-purchase sales promotions are exploration, savings and structural bonds. Overall, our results show that savings and structural bonds are important during both stages, while convenience and social bonds are important during pre-purchase sales promotions and exploration is important during post-purchase sales promotions. The different effects of benefits on CBBE between pre- and post-purchase sales promotions may give practical suggestions to managers in providing appropriate benefits during the two stages. This paper extends the study on sales promotion and brand equity to the e-commerce platform context and reveals the positive effects of sales promotions on CBBE.

2. Sales Promotions and Customer-Based Brand Equity

2.1. Sales Promotions

Promotion has been widely studied by academic researchers (Buzzell et al., 1990; Davis et al., 1992). Among such research on promotion, sales promotion, which comprises of various motivational tactics to stimulate consumers' consumption, receives the most attention (Chandon et al., 2000; Palazón-Vidal & Delgado-Ballester, 2005). Sales promotion includes multiple tactics such as sales (e.g., markdowns and clearance), promotion (e.g., gifts, cash rebates, or two for one pricing), and purchase ideas (such as one-stop shopping) (Lo et al., 2016). However, relationship marketing tools such as store specific currency rebates (e.g., Taobao coins), free returns and payment financing service (a customer can buy a product on the e-commerce platform by paying in installments with no money down for the first few months) have also been used in sales promotion (Chattananon & Trimetsoontorn, 2009) to enable relationship maintenance between buyers and sellers.

The extant literature on sales promotion has examined a variety of topics. Some studies focus on performance (Sinha & Verma, 2018), some focus on the stages of promotion (DeVecchio et al., 2006; Buil et al., 2013), and others focus on the benefits (Chandon et al., 2000). Though price discounts are thought to be the main benefit sales promotion provides (Jee, 2021), other hedonic or utilitarian benefits are also important value generated by sales promotion (Chandon et al., 2000; Jee, 2021). Thus, sales promotion can be divided into monetary promotion such as coupons, sale prices, rebates and non-monetary promotion such as contests and sweepstakes (Buil et al., 2013; Reid et al., 2015). Different stages of promotion have different effects on consumers' purchase decision (Ozer & Gultekin, 2015) and brand equity (Buil et al., 2013). Monetary promotions negatively affect brand image (Reid et al., 2015), while non-monetary promotions have positive effects on brand equity (Palazón-Vidal & Delgado-Ballester, 2005). Though researchers have studied the effect of sales promotion on brand equity, none has examined the relationship from the benefits perspective.

2.1.1. Pre-purchase and Post-purchase Sales Promotions

According to Cao & Gruca (2004), services provided by e-tailers can be classified into pre-purchase and post-purchase services based on two basic functions of the service provider: information and delivery. Pre-purchase services are used to stimulate customers into making purchases, while post-purchase services are provided to enhance value to retain customers (Shokouhyar et al., 2020). Sales promotions also provide two functions.

First, they provide information on the promoted products and reduce prices to appeal to prospective customers. Second, coupons or promotional services can be provided after a purchase to stimulate future purchases. Thus, we define pre-purchase sales promotion as promotional tactics that can be viewed prior to a purchase and post-purchase sales promotion as promotional tactics provided based on a purchase. For example, information about product delivery made available before a purchase is a pre-purchase sales promotion, while coupons or discounts for the next purchase provided after a purchase are post-purchase sales promotions. Post-purchase sales promotion focuses more on maintaining the relationship with the customers than pre-purchase sales promotion.

2.1.2. The Effects of Sales Promotions on CBBE

The ability of sales promotion to stimulate sales and instantly enhance market share has been confirmed by extant studies (Alvarez & Casielles, 2005; Sinha & Verma, 2018). However, two inconsistent views on sales promotion's effects on brand equity exist.

According to the first view, sales promotion is a price due to myopic marketers (Buzzell et al., 1990). It helps retailers to obtain a higher market share in the short term, but increases customers' price sensitivity and erodes brand equity in the long run (Ngobo & Jean, 2012). Lang et al. (2022) reveal that promotional mix elements except sales promotion positively affect CBBE and argue that reduced price is the only benefit consumers get from sales promotion. In contrast, Chandon et al. (2000) confirm that, in addition to price reduction, sales promotion has other benefits such as savings, quality, convenience, value expression, entertainment, and exploration. Other researchers reveal sales promotion may lead to impulsive purchases, which might cause customers' dissatisfaction (Sinha & Verma, 2018). This dissatisfaction damages customers' perception of the brand. However, Lee (2015) finds contradictory evidence that this dissatisfaction caused by impulsive purchases can increase customers' perception of the brand because customers may increase their perception of the brand equity to justify their impulse purchase decisions.

The second view on the effect of sales promotion on brand equity reveals no negative relationship between the two in the long-term (Davis et al., 1992; Aydinli et al., 2014). For example, Aydinli et al. (2014) show that sales promotions will not weaken the connection between the brand and the customer. Instead, they will strengthen the affect consumers perceive about the product brand. DelVecchio et al. (2006) identify a dual effect – both positive and negative – of sales promotion on brand preference. Additionally, promotion may positively affect brand equity elements (Palazón-Vidal & Delgado-Ballester, 2005) or have a positive long-term effect on purchase intention and brand performance (Ailawadi et al., 2003). Therefore, sales promotions may have positive effects on CBBE.

Berry (2000) claims that, in services, the company providing those services is the primary brand. As most e-commerce platforms in China are service-providing companies, enhancing the brand equity of the e-commerce platform is important because brand equity increases the trust in intangible services (Kao & Lin, 2016). According to Berry (2000), good service experience contributes to brand equity. Sales promotion has been confirmed to provide a positive consumption experience (Chandon et al., 2000). Additionally, Alvarez & Casielles (2005) reveal that environment promotions (e.g., store-based promotion) influence consumers' brand choice and the outcome of how a consumer evaluates brand equity (Wang & Finn, 2014; Iglesias et al., 2019). Hence, e-commerce platform-based promotion may affect its CBBE.

2.1.3. The Benefits of Sales Promotions

According to Keller (1993), benefits of sales promotion are the perceived value attached to consumers' experience, which includes exposure (e.g., seeing promotional information) and usage (e.g., buying a product at a discounted price). In this study, we define pre-purchase sales promotion as information about promotional products and accounts prospective customers can acquire prior to their purchases. Chandon et al. (2000) identify savings, convenience, and exploration as the most important benefits people obtain from pre-purchase sales promotions. Post-purchase sales promotion refers to benefits a customer obtains based on a purchase and is an important marketing tactic that strengthens relationship bonding between sellers and buyers (Zeithaml et al., 1985).

Relationship bonding is usually classified into two categories: structural and social bonding (Wilson, 1995; Rodríguez & Wilson, 2002). Structural bonding refers to the investment a customer makes or the benefits she obtains that cannot be taken away when she ends the relationship. Social bonding is about the interpersonal relationships a customer has with a seller (Wilson, 1995).

A third stage of bonding, financial bonding, also exists and refers to the monetary benefits a customer can obtain from the relationship (Berry, 1995). In this study, the financial bonding consumers obtain from post-purchase sales promotions are the reduced prices for future purchases (Huang et al., 2014), which are equivalent to savings. Therefore, the benefits customers can acquire from post-purchase sales promotion are savings, structural bonding, and social bonding. Although there are additional bonds identified by other studies, the above-mentioned three bonds are well-suited to study the relationship between consumers and firms (Huang et al., 2014). Table 1 summarizes the five benefits of sales promotion: convenience, exploration, savings, structural bonding, and social bonding.

Table 1: The Benefits of Sales Promotions.

| Benefit | Definition | Sources |
|-------------------------|--|------------------------|
| Exploration | Customers' ability to find new shopping ideas when they are exposed to promotional information. | (Kahn, 1995) |
| Convenience | Customers can be reminded of their needs and their shopping experience can be more efficient through sales promotions that reduce their search and decision costs. | (Chandon et al., 2000) |
| Savings/financial bonds | Customers' ability to pay a lower price for a product of the same quality. | (Berry 1995) |
| Structural bonds | Special services or privilege customers can obtain from sales promotions based on the relationship; Cannot be taken away if customers end the relationship. | (Berry, 1995) |
| Social bonds | Personal affection customers develop about the seller through sales promotions. | (Berry, 1995) |

2.2. Consumer-based Brand Equity

Brand equity is defined as the added value to a product or service by being linked with a brand name (Keller, 1993; Aaker, 1996). It helps a customer make a choice among multiple alternative products and increases her confidence in the purchase decision and satisfaction with the product (Aaker, 1996; Swoboda & Winters, 2021; Wang et al., 2021). Thus, it is important for businesses to build a strong brand. Aaker (1996) identifies five components of brand equity: brand awareness, brand loyalty, perceived quality, brand associations, and market behavior. Keller (1993) suggests CBBE is the added equity a consumer perceives of the brand.

CBBE has been investigated by academics and practitioners since it was coined in the early 1980s. The concept of CBBE and its dimensions defined in this study are based on Keller (1993). CBBE refers to a customer's reaction to the marketing tactics implemented by a brand compared to her reaction to the same marketing tactics implemented by other brands which in turn affects brand equity (Datta et al., 2017). It is based on the customer's knowledge about the brand, which comprises of a variety of associations in memory (Çifci et al., 2016; Luffarelli et al., 2019).

CBBE consists of two components in this study: brand awareness and brand association. Brand awareness refers to the ability of a customer to recognize or recall the name of the brand when given a signal. It is positively affected by the presentation of the brand (Berry, 2000). Brand association is also called brand image or brand meaning (Berry, 2000) and refers to a customer's subjective perception of the brand, which is positively affected by the customer's experience (Bilgihan et al., 2015; Huang & Ku, 2016).

In the context of this study, brand awareness means the extent to which an individual recalls the name of an e-commerce platform when she wants to purchase online. Further, brand association refers to the dominant trait of the e-commerce platform that comes to a customer's mind when she is reminded of the e-commerce platform. For example, low prices and variety of products are the main appeals of Taobao.com, while high quality 3C products (computer, communication and consumer electronics) are the main appeals of JD.com.

3. Research Model and Hypotheses

To confirm the benefits consumers perceive from an e-commerce platform, we first conducted an exploratory study using semi-structured interviews of 20 working professionals and students, two groups that represent the majority of Chinese e-commerce users. The interviewees answered open-ended questions such as "why did you participate in platform-based promotion and choose a specific e-commerce platform" and "which services during the e-commerce platform promotion satisfied you the most?"

Afterwards, two Ph.D. candidates were recruited to conduct a content analysis of the results using the following steps. First, we extracted keywords or phrases which were related as items and removed those that appeared with low frequencies (e.g., only one or two times). This resulted in 12 remaining items. Next, we printed each item on one card and randomly showed these cards to the two candidates. Each candidate categorized the cards independently into different constructs and verified the discriminant validity of these constructs (Moore & Benbasat, 1991). When they had different opinions, they resolved the differences through discussion. At the end, they sorted these 12 items into five categories, representing the five benefits shown in Table 1 that consumers perceive from e-commerce platform promotion based on the extant literature.

Based on the five benefits of sales promotions, we next developed our theoretical model on how these benefits affect the CBBE and how their relationships are moderated by the promotion stage. Figure 1 summarizes our research model.

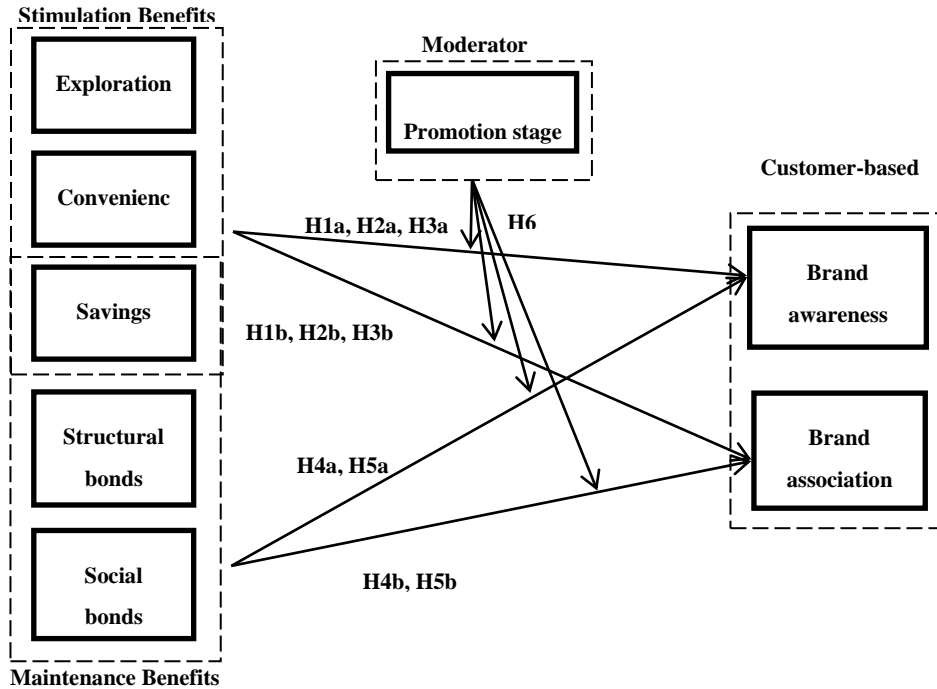


Figure 1: The Research Model

3.1. Benefits

As defined by Keller (1993), benefits are values perceived attached to the sales promotion experience. Further, a positive experience significantly affects CBBE (Berry, 2000). Hence, we expect that sales promotion benefits affect the CBBE of the e-commerce platform. While sales promotions can stimulate consumers' consumption (Lo et al., 2016), they can also be used for relationship marketing (Copulsky & Wolf, 1990). Thus, we classify the benefits of e-commerce platform-based sales promotions into stimulation and maintenance benefits.

3.1.1. Stimulation Benefits

Exploration refers to the ability of consumers to identify new shopping ideas when exposed to promotional information (Chandon et al., 2000). Compared with consumers who receive no promotional information from an e-commerce platform, those frequently exposed to promotional information of the platform may recognize and recall its name easily. Moreover, more product information is usually provided to consumers together with the promotional information. According to Ballantine (2005), the amount of information contributes to customers' satisfaction in online shopping, thus leading to improved brand awareness and brand association (Gil-Saura et al., 2016).

When an e-commerce platform sales promotion occurs, many sellers on the platform participate in the promotion and deep discounts are provided on a wide selection of merchandise. Hence, consumers are exposed to products they need or like at cheaper prices, and they can easily find something they want to purchase. Because consumers are known to develop brand association between a brand and the perceived benefits from the brand and its attributes (Krishnan, 1996), they may perceive a higher strength and form a positive brand association with the e-commerce platform due to the wide product selection. Additionally, the variety of product selection increases consumers' probability of finding all they need in one online store, which contributes to a positive consumption experience and is conducive to enhancing the service brand (Mussol et al., 2019). Thus, we propose:

H1a: Exploration is positively associated with the e-commerce platform's brand awareness.

H1b: Exploration is positively associated with the e-commerce platform's brand association.

Convenience as a result of sales promotion refers to the reduction of search and decision costs through the availability of products and the advertisement of sales (Chandon et al., 2000). When a platform-wide sales promotion occurs, many sellers participate in the promotion and advertisement for the promotion with a link to the participating sellers and products is placed on the front page of the e-commerce platform. This makes it easy for customers to locate the sellers and products that participate in the sales promotion. It also gives customers a variety of products to choose from. Hence, customers' search and decision costs are reduced significantly. The lower search cost a customer perceives from an e-commerce platform-based sales promotion may lead to high brand associations

with strength and ease to use, because consumers develop brand association between a brand and the perceived benefits of the brand (Krishnan, 1996).

Moreover, the convenience benefits may be provided through personalized recommendation after a purchase is made, which guides consumers to locate products they want in the presence of an overwhelming amount of product information. Many studies have examined the effect of recommender system on brand loyalty (Pathak et al., 2010) and showed that recommendations remind consumers of what they want and enhance their perception of the brand. In other words, personalized recommendations will positively affect CBBE, thus convenience benefits contribute to CBBE. Overall, the ease of the shopping process owing to convenience benefits will lead to a positive shopping experience, which contributes to CBBE (Berry, 2000). Thus, we propose:

H2a: Convenience is positively associated with the e-commerce platform's brand awareness.

H2b: Convenience is positively associated with the e-commerce platform's brand association.

Chandon et al. (2000) define savings as the monetary savings sales promotions provide. Both pre-purchase and post-purchase sales promotions provide consumers with savings. Low prices can help the e-commerce platform develop a competitive brand association and enhance the platform's appeal (Berry, 2000). An example is Taobao.com, where most products participating in its platform-based sales promotion "Double 11" are discounted at 50 percent or more, leading to a one-day sales of 91.7 billion yuan in 2015. If an e-commerce platform offers the lowest prices than its competitors, low prices may be the typical association to the e-commerce platform, thus leading to high brand awareness and brand association (Berry, 2000).

Moreover, extant studies have found that discounts have positive effects on customers' perceived deal value (Jee, 2021) and perceived satisfaction (Yang & Peterson, 2004), which will lead to high CBBE (Gil-Saura et al., 2016). In addition, savings are positively related to the value of the products and can enhance the recall likelihood of the e-commerce platform (Zeithaml, 1988). Thus, we propose:

H3a: Savings are positively associated with brand awareness.

H3b: Savings are positively associated with brand association.

3.1.2. Maintenance Benefits

Relationship bonding is the most important goal in relationship marketing. The bonding between sellers and buyers help the latter acquire knowledge and enhance their perception of the brand and can positively affect brand loyalty (Chattananon & Trimetsoontorn, 2009). In other words, bonding will positively affect CBBE. As some sales promotion tactics aim at maintaining a strong relationship with the consumers, the closer the relationship a brand has with its customers, the easier it will be for the customers to distinguish the brand from other brands (Chiu et al., 2017). Additionally, a brand with which customers have a relationship means much more to them than other brands that they do not have such relationships with. Thus, bonding as a result of sales promotion will have a positive effect on CBBE.

Structural bonds refer to situations when the benefits customers obtain from the relationship cannot be taken away when the relationship ends (Wilson, 1995). Hence, structural bonding between a brand and a customer is limited to the brand. In other words, a mutual commitment is created between the customer and the brand by structural bonds (Wilson, 1995). This commitment significantly relates to brand identification (Zhou et al., 2012). For example, the only way a customer can enjoy Taobao coins is to choose Taobao.com when she wants to shop, which strengthens her ability to identify the brand.

On the other hand, the special service an individual can obtain only on an e-commerce platform can enhance the meaning of the brand to her and the unique value cultivates brand equity (Berry, 2000). An example is the loan service provided by JD.com, where a consumer can buy a product on credit and pay later in installments. This value-added service has a positive effect on attachment to the e-commerce platform (Huang et al., 2014), which contributes to enhanced CBBE (Swaminathan et al., 2015; Dennis et al., 2016). Thus, we have:

H4a: Structural bonds are positively associated with brand awareness.

H4b: Structural bonds are positively associated with brand association.

Social bonds refer to the interpersonal relationships customers have with a brand (Wilson, 1995). Social bonds may develop through personalized services delivered to consumers and lead to the consumers' preference of the brand. They represent the degree to which customers develop an affect for the brand. Aaker (1996) argues that emotional benefit is very important in building strong brands.

The more a consumer develops an emotional perception of a brand, the more important the brand is to her. It makes the e-commerce platform become a particular one among its competitors. According to Berry (2000), the emotional connection made with consumers contributes to strong brand equity. For example, emails or messages with gift links sent by an e-commerce platform may add associations such as "friendship and caregiver" to the brand (Huang et al., 2014), and links to the e-commerce platform may greatly increase the frequency of consumers' visits,

which will strengthen their recognition of the e-commerce platform (Krishnan, 1996; Buil et al., 2013). Hence, social bonds positively affect CBBE. Thus, we have:

H5a: Social bonds are positively associated with brand awareness.

H5b: Social bonds are positively associated with brand association.

3.2. Promotion Stage

Different sales promotion tactics are used in different phase of sales promotion. In the stage of pre-purchase, there are advertisement, sale prices and coupons stimulating consumption. In contrast, post-purchase promotions are given to customers after their purchases and used to maintain the relationship between the consumers and the shopping platform, including Taobao coins / Jingdou (virtual coins that can be used on Tmall/JD toward future purchases with sellers who accept them), sweepstakes, gifts and shipping cost guarantee. Consumers could reap more stimulation benefits from pre-purchase promotions than from post-purchase promotions, and they reap more maintaining benefits from post-purchase promotions than from pre-purchase promotions. Furthermore, for first-time customers, the assessment of brand equity relies more upon stimulating benefits (Cobb-Walgren et al., 1995; Sriram et al., 2007; Lang et al., 2022), while existing consumers' assessment of post-purchase brand equity relies more on the emotional relationship with the brand, which associate with maintaining benefits (Buil et al., 2013).

In terms of savings benefit, which is conceptualized as both pre-purchase and post-purchase benefits, the effects on brand equity also differ between pre-purchase and post-purchase promotions. In this study, we conceptualized savings as "customers' ability to pay a lower price for a product of the same quality." The savings benefits of pre-purchase promotions are derived from direct discounts or bundle promotions, which have been shown on the platform websites or product pages. Thus, consumers can see before purchase the price of products, and the final price might be in accordance with the expected price. The savings benefits of post-purchase promotions are derived from virtual coins provided such as gift-giving, which cannot be expected before the purchase. Thus, the savings benefits received from post-purchase promotions might give consumers a pleasant surprise. In summary, the savings benefits of pre-purchase promotions are derived from direct discounts or bundle promotions, which relate more to utilitarian benefits, while the savings benefits of post-purchase promotions are derived from virtual coins such as gifts, which relate more to hedonic benefits (Reid et al., 2015). Additionally, these two kinds of benefits have been shown to have different effects on brand equity (Sinha & Verma, 2018). Thus, we propose:

H6: The relationships between the benefits of sales promotion and CBBE are moderated by the promotion stage.

4. Methodology

We used a questionnaire survey to examine the benefits of e-commerce platform-based sales promotions and test our research model. While sales promotions can stimulate consumers' consumption, they can also be used for relationship marketing (Copulsky & Wolf, 1990). Many studies have investigated the stimulation function of sales promotions (Lo et al., 2016), but the buyer and seller relationship maintenance function has received little attention in academic research. Hence, our empirical analyses were performed in two steps. First, we conducted an exploratory study to confirm the stimulation and maintenance functions of the five benefits and how these five benefits affect the evaluations of pre- and post-purchase sales promotions. Next, we analyzed the data to test our research model.

4.1. Instrument and Sample

While developing the questionnaire for the research, we interviewed some consumers on e-commerce platforms to explicitly distinguish between pre- and post-purchase sales promotion tactics. Based on their feedback, we adapted the measurement scales from the extant literature. The items on savings, convenience, and exploration were based on Chandon et al. (2000), the items for structural bonding and social bonding were adapted from Berry (1995), and three items measuring the evaluation of sales promotions were also adapted from Chandon et al. (2000). CBBE consists of brand awareness and brand association (Keller, 1993). The three items on brand awareness and three items on brand association were adapted from Wang & Finn (2014). Appendix D lists the constructs and their measurement items. All items were measured on seven-point Likert scales. Back translation was used to ensure the consistency of the scales between the English and Chinese versions.

All participants were recruited online and had experience with platform-based sales promotions. A monetary reward was offered for each response. The retrospective survey method was used in this study (Lynch & Srull, 1982). First, participants were asked to fill out the questionnaire for all constructs with a recall message about pre-purchase promotions. Then they were reminded about their experience with post-purchase promotions and asked to answer the same questions for all six constructs based on such experience. In total, we obtained 385 responses, 354 of which were valid after we removed those with similar values for all questions. The demographic characteristics of the participants are shown in Table 2.

Table 2: Sample Demographics (N=354).

| Demographics | Option | Frequency | Percentage (%) |
|--------------|-------------------------------------|-----------|----------------|
| Gender | Male | 175 | 49.4 |
| | Female | 179 | 50.6 |
| Age | 16 or below | 0 | 0 |
| | 17~22 | 60 | 16.9 |
| | 23~25 | 112 | 31.6 |
| | 26~30 | 124 | 35.0 |
| | 31~40 | 54 | 15.3 |
| | 41 or older | 4 | 1.2 |
| | Number of e-commerce platforms used | 1 | 17 |
| 2~3 | | 179 | 50.6 |
| 4~5 | | 116 | 32.8 |
| 6~7 | | 35 | 9.9 |
| 8 or more | | 7 | 1.9 |

5. Results

In this section, we first report the results of our exploratory study where we confirmed the two functions of e-commerce platform-based sales promotions and how such benefits affect the evaluation of sales promotions. Next, we report the results of the research model test.

5.1. Exploratory Study

Our data analyses for the exploratory study were carried out in two steps. First, we validated the constructs for the benefits of sales promotions and confirmed the existence of the two functions (stimulation and maintenance). Principal components analysis was conducted using SPSS to test the convergent and discriminant validities of the five benefits. Further, Amos was used to perform a second-order factor analysis (shown in Figure 2) to confirm the two different functions of the five benefits.

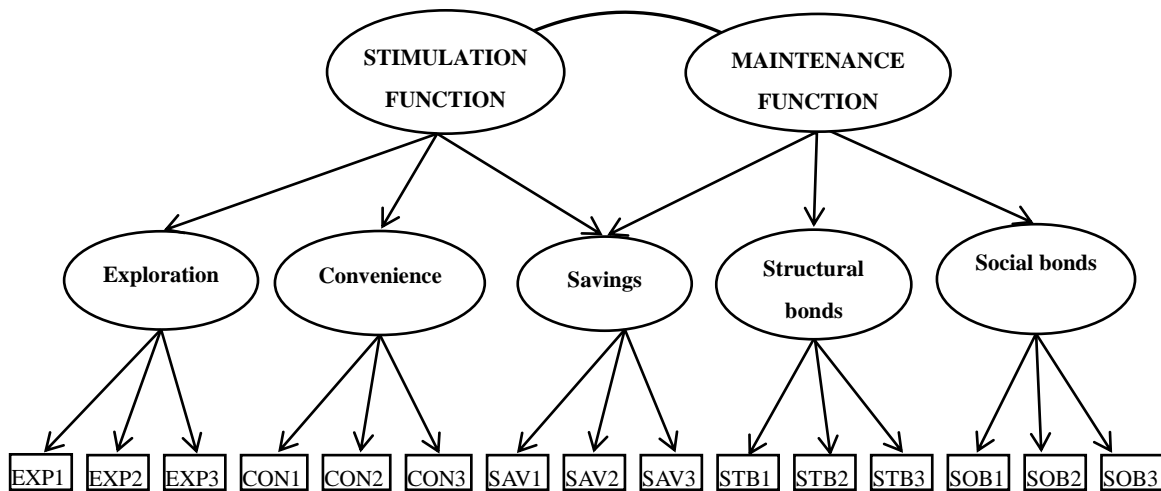


Figure 2: Second-order Confirmatory Factor Model

Second, we respectively tested the influences of the benefits on the evaluation of pre-purchase and post-purchase sales promotions to examine whether the two stages of sales promotions perform different functions. The research model regarding the benefits and promotion evaluation were examined using SmartPLS.

5.1.1. Reliability and Validity

We conducted principal components analysis and confirmatory factor analysis using SPSS to test the reliability and validity of the latent constructs. The Kaiser-Meyer-Olkin (KMO) statistic was higher than 0.8 ($p < 0.01$), indicating principal components analysis was appropriate for the data. Tables 3 and 4 show the results of the measurement model test. The composite reliability (CR) (> 0.70) and Cronbach's α (> 0.70) of each construct indicate the internal consistency reliability of the construct was robust. The constructs' average variance extracted (AVEs) ranged from 0.636 to 0.857, all higher than the threshold value of 0.50 (Straub et al., 2004). Factor loadings ranged from 0.752 to 0.936 ($p < 0.0001$) and were all higher than the threshold value of 0.70 (Hair et al., 2006), which indicates a good reliability and convergent validity of the measurement model.

Table 3: Pre-purchase Sales Promotion Measurement Model Testing Results.

| Construct | Indicator | Loading | Cronbach's α | CR | AVE |
|----------------------|-----------|---------|---------------------|-------|-------|
| Exploration | EXP1 | 0.853 | | | |
| | EXP2 | 0.752 | 0.716 | 0.839 | 0.636 |
| | EXP3 | 0.784 | | | |
| Convenience | CON1 | 0.857 | | | |
| | CON2 | 0.881 | 0.825 | 0.895 | 0.740 |
| | CON3 | 0.843 | | | |
| Savings | SAV1 | 0.847 | | | |
| | SAV2 | 0.892 | 0.856 | 0.912 | 0.776 |
| | SAV3 | 0.904 | | | |
| Social bonds | SOB1 | 0.862 | | | |
| | SOB2 | 0.764 | | | |
| | SOB3 | 0.806 | | | |
| Structural bonds | STB1 | 0.858 | | | |
| | STB2 | 0.855 | 0.810 | 0.887 | 0.724 |
| | STB3 | 0.840 | | | |
| Promotion evaluation | PRE1 | 0.916 | | | |
| | PRE2 | 0.904 | 0.888 | 0.930 | 0.817 |
| | PRE3 | 0.891 | | | |

Table 4: Post-purchase Sales Promotion Measurement Model Testing Results.

| Construct | Indicator | Loading | Cronbach's α | CR | AVE |
|----------------------|-----------|---------|---------------------|-------|-------|
| Exploration | EXP1 | 0.895 | | | |
| | EXP2 | 0.867 | 0.849 | 0.908 | 0.767 |
| | EXP3 | 0.864 | | | |
| Convenience | CON1 | 0.880 | | | |
| | CON2 | 0.902 | 0.863 | 0.916 | 0.785 |
| | CON3 | 0.875 | | | |
| Savings | SAV1 | 0.884 | | | |
| | SAV2 | 0.915 | 0.888 | 0.930 | 0.817 |
| | SAV3 | 0.913 | | | |
| Social bonds | SOB1 | 0.887 | | | |
| | SOB2 | 0.812 | 0.824 | 0.895 | 0.740 |
| | SOB3 | 0.881 | | | |
| Structural bonds | STB1 | 0.869 | | | |
| | STB2 | 0.836 | 0.798 | 0.881 | 0.712 |
| | STB3 | 0.826 | | | |
| Promotion evaluation | PRE1 | 0.926 | | | |
| | PRE2 | 0.936 | 0.917 | 0.947 | 0.857 |
| | PRE3 | 0.916 | | | |

What's more, table 5 summarizes the results of the discriminant validity check. The square root of each construct's AVE was greater than its correlations with those of other constructs. Hence, the discriminant validity of the measurement model was supported.

Table 5: Discriminant Validity Check Results.

| Construct | Inter-Construct Correlations of the AVEs | | | | | |
|--------------------------------|--|-------|-------|-------|-------|-------|
| | EXP | CON | SAV | SOB | STB | PRE |
| Pre-purchase sales promotions | | | | | | |
| EXP | 0.798 | | | | | |
| CON | 0.528 | 0.860 | | | | |
| SAV | 0.415 | 0.565 | 0.881 | | | |
| SOB | 0.360 | 0.504 | 0.433 | 0.812 | | |
| STB | 0.446 | 0.498 | 0.328 | 0.467 | 0.851 | |
| PRE | 0.476 | 0.620 | 0.626 | 0.507 | 0.491 | 0.904 |
| Post-purchase sales promotions | | | | | | |
| EXP | 0.876 | | | | | |
| CON | 0.698 | 0.886 | | | | |
| SAV | 0.580 | 0.639 | 0.904 | | | |
| SOB | 0.566 | 0.611 | 0.595 | 0.860 | | |
| STB | 0.507 | 0.570 | 0.420 | 0.574 | 0.844 | |
| PRE | 0.663 | 0.629 | 0.660 | 0.601 | 0.502 | 0.926 |

Notes: EXP: Exploration; CON: Convenience; SAV: Savings; SOB: Social bonds; STB: Structural bonds; PRE: Promotion evaluation.

5.1.2. Validating the Benefits of Sales Promotion

After establishing the validity of the measurement scales, we next examined how the five benefits fall under the two functions – stimulation or maintenance - using a second-order factor analysis (shown in Figure 1). All statistics showed the two second-order factors model was better than the single second-order factor model ($\chi^2=560$, $p<0.01$ for the two second-order factors model; $\chi^2=605$, $p<0.01$ for the single second-order factor model). The difference of

the χ^2 's was significant ($\Delta\chi^2=45$, $df=1$, $p<0.01$). Among all the two second-order factors models, the one shown in Figure 1 had the best fit indices. Hence, the results supported the two functions (stimulation and maintenance) of the five benefits.

5.1.3. The Influence of Benefits on the Evaluation of Pre-purchase and Post-purchase Sales Promotions

After confirming the two functions of sales promotions, we next evaluated the effects of the five benefits on consumers' evaluation of pre-purchase and post-purchase sales promotions. Specifically, we examined the ability of each benefit to predict a consumer's overall evaluation of the sales promotion. Because this research focuses on the stage of the sales promotion (pre-purchase vs. post-purchase), we expect the effects of pre-purchase and post-purchase sales promotions to be different. Hence, we performed the analyses on the two stages of sales promotions separately.

The results in Table 6 show that, contrary to our expectation, the overall evaluation of pre-purchase sales promotion was primarily predicted by convenience, savings, social bonds, and structural bonds benefits, while the evaluation of post-purchase sales promotion was primarily predicted by exploration and savings benefits. Overall, 56.9% of the variance in pre-purchase promotion evaluation and 58.7% of the variance in post-purchase promotion evaluation were explained by the benefits, which support the multiple benefits framework proposed. These results suggest that both pre- and post-purchase sales promotions performed stimulation and maintenance functions.

Table 6: Impacts of Benefits on Evaluations of Sales Promotions.

| Construct | Evaluation of pre-purchase sales promotion | | Evaluation of post-purchase sales promotion | |
|------------------|--|----------|---|----------|
| | Beta | t-value | Beta | t-value |
| Exploration | 0.091 | 1.627 | 0.297 | 4.290*** |
| Convenience | 0.228 | 4.199*** | 0.083 | 1.304 |
| Saving | 0.349 | 6.572*** | 0.309 | 4.992*** |
| Social bonds | 0.134 | 2.715** | 0.147 | 1.242 |
| Structural bonds | 0.159 | 3.472** | 0.090 | 1.904 |
| R-squared | 0.569 | | 0.587 | |

Notes: * $p<0.05$, ** $p<0.01$, *** $p<0.001$.

5.2. Research Model Testing

In the second step of our data analyses, we tested our research model on the effects of the benefits of e-commerce platform-based sales promotions on the platform's CBBE. Additionally, we compared how the impacts of the benefits on CBBE differ between pre- and post-purchase sales promotions.

5.2.1. Reliability and Validity

The Kaiser-Meyer-Olkin (KMO) statistics were 0.90 for the constructs measure based on pre-purchase sales promotion and 0.86 for the constructs measured based on post-purchase sales promotion (p -values < 0.01). Hence it was appropriate to conduct principal components analysis on the data. Table 7 shows the results of measurement model testing. The high composite reliability (>0.70) and Cronbach's α (>0.70) of each construct indicated the internal consistency of the constructs was robust. The constructs' AVEs all higher than the threshold value of 0.50 (Straub et al., 2004). All factor loadings were higher than the threshold value of 0.70 (Hair et al., 2006). Thus, our measurement model testing results revealed satisfactory reliability and convergent validity of the collected data.

Table 7: Measurement Model Testing Results.

| Construct | Indicator | Loading a | Cronbach's α | CR | AVE |
|-------------------------------|-----------|-----------|---------------------|-------|-------|
| Pre-purchase sales promotion | | | | | |
| Exploration | EXP1 | 0.831 | | | |
| | EXP2 | 0.780 | 0.716 | 0.841 | 0.638 |
| | EXP3 | 0.784 | | | |
| Convenience | CON1 | 0.866 | | | |
| | CON2 | 0.876 | 0.825 | 0.895 | 0.740 |
| | CON3 | 0.838 | | | |
| Savings | SAV1 | 0.832 | | | |
| | SAV2 | 0.901 | 0.856 | 0.912 | 0.775 |
| | SAV3 | 0.905 | | | |
| Social bonds | SOB1 | 0.891 | | | |
| | SOB2 | 0.731 | 0.741 | 0.850 | 0.655 |
| | SOB3 | 0.798 | | | |
| Structural bonds | STB1 | 0.871 | | | |
| | STB2 | 0.851 | 0.810 | 0.887 | 0.725 |
| | STB3 | 0.831 | | | |
| Brand awareness | BAW1 | 0.851 | | | |
| | BAW2 | 0.900 | 0.854 | 0.911 | 0.774 |
| | BAW3 | 0.887 | | | |
| Brand association | BAS1 | 0.820 | | | |
| | BAS2 | 0.860 | 0.826 | 0.896 | 0.742 |
| | BAS3 | 0.902 | | | |
| Post-purchase sales promotion | | | | | |
| Exploration | EXP1 | 0.889 | | | |
| | EXP2 | 0.865 | 0.849 | 0.908 | 0.767 |
| | EXP3 | 0.874 | | | |
| Convenience | CON1 | 0.893 | | | |
| | CON2 | 0.900 | 0.863 | 0.916 | 0.784 |
| | CON3 | 0.863 | | | |
| Savings | SAV1 | 0.878 | | | |
| | SAV2 | 0.909 | 0.888 | 0.930 | 0.816 |
| | SAV3 | 0.924 | | | |
| Social bonds | SOB1 | 0.873 | | | |
| | SOB2 | 0.817 | 0.800 | 0.882 | 0.714 |
| | SOB3 | 0.843 | | | |
| Structural bonds | STB1 | 0.876 | | | |
| | STB2 | 0.845 | 0.798 | 0.881 | 0.712 |
| | STB3 | 0.810 | | | |
| Brand awareness | BAW1 | 0.859 | | | |
| | BAW2 | 0.897 | 0.854 | 0.911 | 0.774 |
| | BAW3 | 0.883 | | | |
| Brand association | BAS1 | 0.803 | | | |
| | BAS2 | 0.872 | 0.826 | 0.896 | 0.742 |
| | BAS3 | 0.906 | | | |

Note: ^aAll standard loadings were significant at $p < 0.001$.

Table 8 summarizes the results of the discriminant validity check. The square root of each construct's AVE was greater than its correlations with those of other constructs. The discriminant validity of the data was supported.

Table 8: Discriminant Validity of Constructs.

| Construct | Inter-Construct Correlations of the AVEs | | | | | | |
|-------------------------------|--|-------|-------|-------|-------|-------|-------|
| | EXP | CON | SAV | SOB | STB | BAW | BAS |
| Pre-purchase sales promotion | | | | | | | |
| EXP | 0.799 | | | | | | |
| CON | 0.528 | 0.860 | | | | | |
| SAV | 0.417 | 0.564 | 0.880 | | | | |
| SOB | 0.409 | 0.502 | 0.402 | 0.781 | | | |
| STB | 0.445 | 0.496 | 0.330 | 0.495 | 0.851 | | |
| BAW | 0.306 | 0.470 | 0.310 | 0.284 | 0.460 | 0.880 | |
| BAS | 0.372 | 0.520 | 0.434 | 0.442 | 0.501 | 0.687 | 0.862 |
| Post-purchase sales promotion | | | | | | | |
| EXP | 0.876 | | | | | | |
| CON | 0.699 | 0.885 | | | | | |
| SAV | 0.580 | 0.637 | 0.904 | | | | |
| SOB | 0.575 | 0.621 | 0.598 | 0.845 | | | |
| STB | 0.509 | 0.571 | 0.418 | 0.535 | 0.844 | | |
| BAW | 0.401 | 0.375 | 0.309 | 0.342 | 0.356 | 0.880 | |
| BAS | 0.548 | 0.504 | 0.523 | 0.472 | 0.437 | 0.680 | 0.861 |

Notes: EXP: Exploration; CON: Convenience; SAV: Savings; SOB: Social bonds; STB: Structural bonds; BAW: Brand awareness; BAS: Brand association.

Because we used self-reported data in our study, common method bias (CMB) might be a potential concern. A marker variable assessment technique was used to assess CMB using SmartPLS (Lindell & Whitney, 2001). The results in Appendix A demonstrated the insignificance of most method factor loadings, and the average method variance of the indicators was 0.003 in pre-purchase stage and post-purchase stages. The average substantive variance explained was 0.718 in the pre-purchase stage and 0.762 in the post-purchase stage. The ratio of substantively explained variance to method-based variance was above 100:1, suggesting that CMB was not problematic in our study.

Furthermore, to determine if multicollinearity was a problem, we examined the variance inflation factors (VIF) of the variables, as shown in Appendix B. All VIFs were under the recommend threshold of 3.0 (Hair et al., 2006). Hence, multicollinearity was not an issue in our research.

To further assess discriminant validity, we measured the Heterotrait-Monotrait ratios, as shown in Appendix C. The Heterotrait-Monotrait ratios were all smaller than the recommended threshold of 0.85 (Hair et al., 2006), indicating a good discriminant validity.

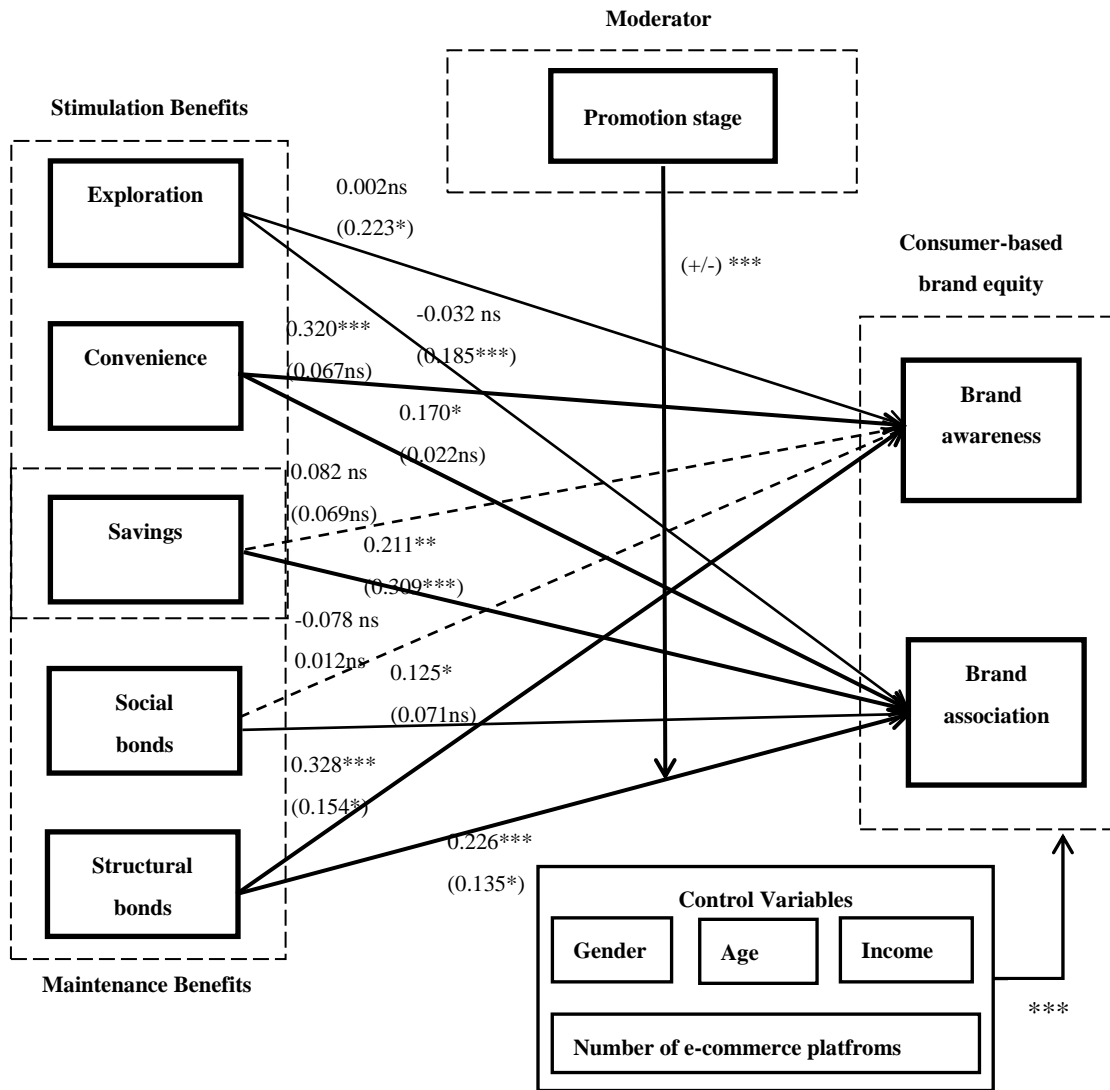
5.2.2. Control Variables

Additionally, we tested the effects of control variables such as age, gender, income and number of e-commerce platforms on the two dependent variables. We found that gender ($\beta_{\text{brand awareness/pre-promotion}} = 0.07, p > .05$; $\beta_{\text{brand association/pre-promotion}} = 0.057, p > .05$), age ($\beta_{\text{brand awareness/pre-promotion}} = 0.055, p > .05$; $\beta_{\text{brand association/pre-promotion}} = 0.048, p > .05$; $\beta_{\text{brand awareness/post-promotion}} = 0.056, p > .05$; $\beta_{\text{brand associations/post-promotion}} = 0.038, p > .05$), income ($\beta_{\text{brand awareness/pre-promotion}} = 0.028, p > .05$; $\beta_{\text{brand association/pre-promotion}} = 0.041, p > .05$; $\beta_{\text{brand awareness/post-promotion}} = 0.039, p > .05$; $\beta_{\text{brand associations/post-promotion}} = 0.078, p > .05$), and number of e-commerce platforms ($\beta_{\text{brand association/pre-promotion}} = 0.054, p > .05$) were insignificant predictors of brand awareness and brand associations., while gender ($\beta_{\text{brand awareness/post-promotion}} = 0.108, p < .05$; $\beta_{\text{brand associations/post-promotion}} = 0.101, p < .05$) and number of e-commerce platforms ($\beta_{\text{brand awareness/pre-promotion}} = 0.041, p < .05$; $\beta_{\text{brand awareness/post-promotion}} = 0.161, p < .05$; $\beta_{\text{brand associations/post-promotion}} = 0.115, p < .05$) were significant predictors of brand awareness and brand associations.

5.2.3. Hypothesis Testing Results

Figure 3 summarizes the path coefficients for the testing of the structural model based on pre-purchase and post-purchase sales promotions, with the betas for the post-purchase sales promotion in parentheses. The path coefficient from exploration to brand awareness was positive and significant for post-purchase sales promotion ($\beta = 0.223, p < 0.05$), but not for pre-purchase sales promotion. Hence, H1a was partially supported. The effect of convenience ($\beta = 0.320, p < 0.001$) on brand awareness was positive and significant for pre-purchase sales promotion, but not significant for post-purchase sales promotion. Hence, H2a was partially supported. The effect of structural bonds on brand awareness was positive and significant for pre-purchase sales promotion ($\beta = 0.328, p < 0.001$) and post-purchase sales promotion ($\beta = 0.154, p < 0.05$). Hence, H4a was supported. The other path coefficients were

non-significant. As a result, H3a and H4a were not supported. Overall, the model explained 28.9% of the variance in brand awareness for pre-purchase sales promotion and 34.4% of the variance in brand awareness for post-purchase sales promotion.



Notes: Path coefficients for post-purchase sales promotion in parentheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$, ns: non-significant.

Figure 3: Structural Model Testing Results

The effect of exploration on brand association was positive and significant for post-purchase sales promotion ($\beta = 0.185$, $p < 0.05$) but not for pre-purchase sales promotion, partially supporting H1b. The effects of convenience ($\beta = 0.170$, $p < 0.05$) and social bonds ($\beta = 0.125$, $p < 0.05$) on brand association were positive and significant for pre-purchase sales promotion, but not for post-purchase sales promotion, partially supporting H2b and H5b. Finally, as we hypothesized in H3b and H4b, savings (pre-purchase: $\beta = 0.211$, $p < 0.01$; post-purchase: 0.309 , $p < 0.001$) and structural bonds (pre-purchase: $\beta = 0.226$, $p < 0.001$; post-purchase: 0.135 , $p < 0.05$) both had positive and significant effects on brand association. Overall, the model explained 17.4% of the variance in brand association for pre-purchase sales promotion and 32.5% of the variance in brand association for post-purchase sales promotion.

5.2.4. Comparison between Pre- and Post-purchase Sales Promotions

After the structural model testing, we conducted a multigroup analysis. Following Keil et al. (2000), we compared the path coefficients for pre- and post-purchase sales promotions and report the t-values in Table 9. The results show that most of the comparisons were statistically significant, except for the paths from savings to brand awareness. As we hypothesized in H6, the effects of the five benefits on brand equity between pre- and post-purchase sales promotions were significantly different. First, compared with those during pre-purchase sales promotion, the positive effects of exploration on brand equity (both brand awareness and brand association) were strengthened during post-purchase sales promotion. The effect of savings on brand association and the effect of social bonds on brand awareness also strengthened through post-purchase promotional tactics. The relationships between convenience and CBBE were also moderated by promotion stage, with the effects stronger during pre-purchase sales promotion. The moderating effects of promotion stage on the relationships between structural bonds and CBBE and between social bonds and brand association were also significant. Thus, H6 was supported.

Table 9: Comparison between Pre- and Post-purchase Sales Promotions.

| IV | Brand Awareness | | Brand Association | | | | | |
|-------|-----------------|----------------|------------------------------|---------|---------------|----------------|------------------------------|---------|
| | β_{Pre} | β_{Post} | Comparison | | β_{Pre} | β_{Post} | Comparison | |
| | | | $\beta_{Pre} - \beta_{Post}$ | t-value | | | $\beta_{Pre} - \beta_{Post}$ | t-value |
| EXP | 0.002 | 0.223* | -0.221*** | -16.84 | -0.032 | 0.185* | -0.217*** | -13.23 |
| CON | 0.320*** | 0.067 | 0.253*** | 15.91 | 0.170* | 0.022 | 0.148*** | 11.84 |
| SAV | 0.082 | 0.069 | — | — | 0.211** | 0.309*** | -0.098*** | -10.00 |
| SOB | -0.078 | 0.012 | — | — | 0.167** | 0.071 | 0.096*** | 8.91 |
| STB | 0.295*** | 0.123 | 0.172*** | 14.13 | 0.226*** | 0.135* | 0.091*** | 7.43 |
| R^2 | 0.289 | 0.344 | — | — | 0.174 | 0.325 | — | — |

Notes: EXP: Exploration; CON: Convenience; SAV: Savings; SOB: Social bonds; STB: Structural bonds. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Table 10: Results of Hypothesis Testing.

| Hypo | Path | Beta (post-purchase) | Decision |
|------|-----------|---|---------------------|
| H1a | EXP → BAW | 0.002 ^{ns} (0.223*) | Partially Supported |
| H1b | EXP → BAS | -0.032 ^{ns} (0.185*) | Partially Supported |
| H2a | CON → BAW | 0.320*** (0.067 ^{ns}) | Partially Supported |
| H2b | CON → BAS | 0.170* (0.022 ^{ns}) | Partially Supported |
| H3a | SAV → BAW | 0.082 ^{ns} (0.069 ^{ns}) | Not Supported |
| H3b | SAV → BAS | 0.211** (0.309***) | Supported |
| H4a | STB → BAW | 0.328*** (0.154*) | Supported |
| H4b | STB → BAS | 0.226*** (0.135*) | Supported |
| H5a | SOB → BAW | -0.078 ^{ns} (0.012 ^{ns}) | Not Supported |
| H5b | SOB → BAS | 0.125* (0.071 ^{ns}) | Partially Supported |

Notes: EXP: Exploration; CON: Convenience; SAV: Savings; SOB: Social bonds; STB: Structural bonds; BAW: Brand awareness; BAS: Brand association. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

6. Discussion

This research examines the two functions of pre-purchase and post-purchase sales promotions launched by e-commerce platforms and how the benefits they provide affect consumers' perceived brand equity, specifically brand awareness and brand association. We also investigate how the effects differ for pre- versus post-purchase sales promotions.

6.1. Theoretical Contributions

Our research makes the following theoretical contributions.

First, our research reveals the influences of the five benefits on CBBE (i.e., brand awareness and brand association). When exposed to pre-purchase sales promotions, consumers' perceptions such as convenience and structural bonds help enhance brand awareness while convenience, savings, social bonds, and structural bonds help enhance brand association (Chandon et al., 2000; Chattananon & Trimetsoontorn, 2009). When an e-commerce platform-based sales promotion occurs, consumers can easily locate the sellers and products that participate in the promotion by going to the sales promotion event page. This ease of finding products on sale combined with the

discounted prices contributes to consumers' positive experience on the e-commerce platform, thus leading to enhanced brand awareness and brand association.

Second, our results show how the relationships between the benefits and CBBE differ depending on the promotion stage (Buil et al., 2013; Lang et al., 2022). While savings and structural bonds are important during both stages, convenience and social bonds are more important during the pre-purchase stage and exploration is more important during the post-purchase stage.

Third, our results indicate that the benefits affect brand association more than brand awareness. Specifically, savings and social bonds are not related to brand awareness. The insignificance of savings on brand awareness may be because e-commerce platforms regard discounted prices as their core marketing tactics during both promotion stages, thus no single e-commerce platform is perceived to offer the lowest prices among all e-commerce platforms.

6.2. Practical Implications

Sales promotion is one of the most important marketing tactics for sellers. In China, e-commerce platform-based sales promotions have been widely used to stimulate sales. The current research examines how the benefits of e-commerce platform-based sales promotions affect CBBE and offers practitioners the following suggestions on how to improve their sales promotion practice.

First, our research highlights the importance of not only pre-purchase sales promotions but also post-purchase ones. Most researchers and practitioners focus on pre-purchase sales promotions, while post-purchase promotions usually have much smaller scale or are even overlooked. Our results show that benefits from post-purchase sales promotions also contribute to CBBE. Hence, it is important for e-commerce platforms to step up their promotional efforts after customer purchases to retain the customers and stimulate repeated purchases.

Second, our results highlight areas that e-commerce platforms should focus on when trying to promote their brands and products. For example, if a platform aims to enhance its brand awareness among consumers, it should focus on enhancing and advertising the convenience and structural bonds the platform provides to its customers during the pre-purchase stage and the exploration benefits it provides during the post-purchase stage.

Some strategies to enhance brand awareness for e-commerce platforms may be the following. First, because convenience benefits increase brand awareness during pre-purchase sales promotions, e-commerce platforms should provide more promotional activities. This is because gathering a variety of products based on a theme, such as the Mid-autumn Festival, helps consumers easily find or remind them of what they need. Second, since our results show that structural bonds benefits during pre-purchase sales promotions enhance brand awareness, e-commerce platforms should develop personalized services specific for products on the platform. An example will be giving a customer a deep discount if she pays a deposit in advance to reserve a product. Third, because exploration benefits provided during the post-purchase stage enhance brand awareness, managers should develop recommendation systems based on consumers' consumption to provide more personalized and attractive product information after a purchase is made. To enhance brand association, an e-commerce platform should focus on convenience, savings, social bonds, and structural bonds during the pre-purchase stage and exploration, savings, and structural bonds during the post-purchase stage.

We discussed earlier examples of promotional activities providing convenience and structural bonds during the pre-purchase stage and providing exploration benefits during the post-purchase stage. The strategies for increasing savings and social benefits during the pre-purchase stage and increasing savings and structural bonds benefits during the post-purchase stage may include the following. First, during a pre-purchase sales promotion, savings benefits may be increased by providing games for consumers to win currency coupons, which may lower the prices of products they can purchase. Second, social bonds benefits may be increased by sending more emails or messages with customized information or personalized gifts to consumers, enabling relationship maintenance between the e-commerce platform and consumers. Third, savings benefits may be increased by providing more sweepstakes after a purchase is made, which gives the customer chances to acquire the products she wants for free or at low prices. Fourth, during a post-purchase sales promotion, structural bonds benefits may be increased by providing same-day shipping service so as to deliver products to customers quickly.

7. Conclusion

The current research examines the benefits of sales promotions launched by e-commerce platforms and how these benefits affect the CBBE of the platform. In doing so, we propose a multi-benefit framework based on two functions of sales promotion including stimulation and maintenance. Results from our questionnaire survey show that the five benefits of sales promotion positively affect the e-commerce platform's CBBE including brand awareness and brand association. Moreover, these relationships vary depending on the stage of the promotion.

The current research has the following limitations. First, the current research employs the recall method, which may not reflect the customers' actual experiences. Future research can employ laboratory experiments or

observational studies to examine consumer behavior in real time. Second, this research focuses on the e-commerce platform rather than a single store on the e-commerce platform. Future research can verify our research model in the store setting and examine how benefits of store-based sales promotion affect the store's CBBE. Third, the percentages of variance in brand equity explained by our model were low. Future research can examine how factors not included in the model contribute to CBBE. Fourth, users who cannot access the Internet via electronic devices have been ignored in our study. Future research can pay more attention to users without Internet devices.

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Appendix A. Common Method Bias

Table A1: CMB in Pre-purchase Promotion.

Notes: EXP: Exploration; CON: Convenience; SAV: Savings; SOB: Social bonds; STB: Structural bonds; PRE:

| Construct | Indicator | Substantive Factor loading(R1) | R1 | Method Factor Loading(R2) | R2 |
|-----------|-----------|--------------------------------|-------|---------------------------|-------|
| EXP | EXP1 | 0.805*** | 0.648 | 0.023 | 0.001 |
| | EXP2 | 0.782*** | 0.612 | 0.012 | 0.000 |
| | EXP3 | 0.810*** | 0.656 | -0.036 | 0.001 |
| COV | COV1 | 0.859*** | 0.738 | 0.001 | 0.000 |
| | COV2 | 0.861*** | 0.741 | 0.019 | 0.000 |
| | COV3 | 0.862*** | 0.743 | -0.021 | 0.000 |
| SAV | SAV1 | 0.881*** | 0.776 | 0.034 | 0.001 |
| | SAV2 | 0.828*** | 0.686 | 0.080* | 0.006 |
| | SAV3 | 0.939*** | 0.882 | -0.121* | 0.015 |
| SOB | SOB1 | 0.687*** | 0.472 | -0.006 | 0.000 |
| | SOB2 | 0.838*** | 0.702 | 0.045 | 0.002 |
| | SOB3 | 0.818*** | 0.669 | -0.046 | 0.002 |
| STB | STB1 | 0.741*** | 0.549 | 0.111* | 0.012 |
| | STB2 | 0.884*** | 0.781 | -0.018 | 0.000 |
| | STB3 | 0.926*** | 0.857 | -0.089 * | 0.008 |
| BAW | BAW1 | 0.754*** | 0.569 | 0.085 | 0.007 |
| | BAW2 | 0.940*** | 0.884 | -0.046 | 0.002 |
| | BAW3 | 0.885*** | 0.783 | -0.033 | 0.001 |
| BAS | BAS1 | 0.862*** | 0.743 | 0.029 | 0.001 |
| | BAS2 | 0.892*** | 0.796 | 0.003 | 0.000 |
| | BAS3 | 0.886*** | 0.785 | -0.033 | 0.001 |
| Average | | 0.845 | 0.718 | 0.000 | 0.003 |

Promotion evaluation; BAW: Brand awareness; BAS: Brand association. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Table A2: CMB in Post-purchase Promotion

| Construct | Indicator | Substantive Factor loading(R1) | R1 | Method Factor Loading(R2) | R2 |
|-----------|-----------|--------------------------------|-------|---------------------------|-------|
| EXP | EXP1 | 0.778*** | 0.606 | 0.125* | 0.016 |
| | EXP2 | 0.995*** | 0.990 | -0.145* | 0.021 |
| | EXP3 | 0.858*** | 0.737 | 0.016 | 0.000 |
| COV | COV1 | 0.845*** | 0.715 | 0.045 | 0.002 |
| | COV2 | 0.877*** | 0.769 | 0.023 | 0.001 |
| | COV3 | 0.937*** | 0.879 | -0.070 | 0.005 |
| SAV | SAV1 | 0.884*** | 0.781 | 0.040 | 0.002 |
| | SAV2 | 0.856*** | 0.732 | 0.067 | 0.004 |
| | SAV3 | 0.976*** | 0.952 | -0.111* | 0.012 |
| SOB | SOB1 | 0.807*** | 0.651 | -0.022 | 0.000 |
| | SOB2 | 0.902*** | 0.814 | -0.022 | 0.000 |
| | SOB3 | 0.826*** | 0.683 | 0.043 | 0.002 |
| STB | STB1 | 0.809*** | 0.654 | 0.003 | 0.000 |
| | STB2 | 0.854*** | 0.730 | 0.023 | 0.001 |
| | STB3 | 0.869*** | 0.754 | -0.026 | 0.001 |
| BAW | BAW1 | 0.874*** | 0.765 | 0.012 | 0.000 |
| | BAW2 | 0.888*** | 0.789 | 0.010 | 0.000 |
| | BAW3 | 0.878*** | 0.770 | -0.023 | 0.001 |
| BAS | BAS1 | 0.850*** | 0.722 | -0.041 | 0.002 |
| | BAS2 | 0.911*** | 0.831 | -0.010 | 0.000 |
| | BAS3 | 0.823*** | 0.678 | 0.048 | 0.002 |
| Average | | 0.871 | 0.762 | -0.001 | 0.003 |

Notes: EXP: Exploration; CON: Convenience; SAV: Savings; SOB: Social bonds; STB: Structural bonds; BAW: Brand awareness; BAS: Brand association. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Appendix B. VIF indicators

| Items | VIF (pre-purchase) | VIF (post-purchase) |
|-------|--------------------|---------------------|
| EXP1 | 1.465 | 2.090 |
| EXP2 | 1.374 | 2.079 |
| EXP3 | 1.385 | 2.008 |
| COV1 | 1.857 | 2.160 |
| COV2 | 2.011 | 2.340 |
| COV3 | 1.769 | 2.155 |
| SAV1 | 1.942 | 2.354 |
| SAV2 | 2.178 | 2.666 |
| SAV3 | 2.470 | 2.779 |
| SOB1 | 1.653 | 2.116 |
| SOB2 | 1.206 | 1.467 |
| SOB3 | 1.476 | 1.953 |
| STB1 | 1.937 | 1.895 |
| STB2 | 1.883 | 1.781 |
| STB3 | 1.600 | 1.549 |
| BAW1 | 1.957 | 1.957 |
| BAW2 | 2.303 | 2.303 |
| BAW3 | 2.162 | 2.162 |
| BAS1 | 1.672 | 1.672 |
| BAS2 | 1.983 | 1.983 |
| BAS3 | 2.368 | 2.368 |

Notes: EXP: Exploration; CON: Convenience; SAV: Savings; SOB: Social bonds; STB: Structural bonds; BAW: Brand awareness; BAS: Brand association.

Appendix C. Heterotrait-Monotrait Ratios

| Construct | Heterotrait-Monotrait Ratios | | | | | | |
|--------------------------------|------------------------------|-------|-------|-------|--------|-------|-----|
| | EXP | CON | SAV | SOB | STB | BAW | BAS |
| Pre-purchase sales promotions | | | | | | | |
| EXP | | | | | | | |
| CON | 0.689 | | | | | | |
| SAV | 0.533 | 0.667 | | | | | |
| SOB | 0.577 | 0.667 | 0.517 | | | | |
| STB | 0.583 | 0.607 | 0.387 | 0.669 | | | |
| BAW | 0.396 | 0.557 | 0.352 | 0.360 | 0.549 | | |
| BAS | 0.483 | 0.631 | 0.507 | 0.579 | 0.611. | 0.822 | |
| Post-purchase sales promotions | | | | | | | |
| EXP | | | | | | | |
| CON | 0.813 | | | | | | |
| SAV | 0.662 | 0.726 | | | | | |
| SOB | 0.695 | 0.751 | 0.707 | | | | |
| STB | 0.614 | 0.689 | 0.498 | 0.675 | | | |
| BAW | 0.468 | 0.430 | 0.352 | 0.409 | 0.430 | | |
| BAS | 0.653 | 0.592 | 0.598 | 0.575 | 0.533. | 0.822 | |

Notes: EXP: Exploration; CON: Convenience; SAV: Savings; SOB: Social bonds; STB: Structural bonds; BAW: Brand awareness; BAS: Brand association.

Appendix D. Questionnaire Items

| Construct | Item | Item |
|----------------------|------|---|
| Exploration | EXP1 | I like trying new products during this promotion. |
| | EXP2 | I avoid always buying the same products through these promotional tactics. |
| | EXP3 | I can get new ideas of things to buy through this promotion. |
| Convenience | CON1 | These promotional tactics remind me that I need the product. |
| | CON2 | This promotion makes my life easy. |
| | CON3 | I can remember what I need through this promotion. |
| Savings | SAV1 | I really save money by participating in this promotion. |
| | SAV2 | I feel that I am getting a good deal in this promotion. |
| | SAV3 | I really spend less through this promotion. |
| Social bonds | SOB1 | The promotional tactics used in this promotion match my needs. |
| | SOB2 | The promotional tactics used in this promotion help me to solve my personal problems. |
| | SOB3 | From some promotional tactics used in this promotion, I can receive greeting cards or gifts on special days. |
| Structural bonds | STB1 | I receive personalized services through this promotion when I have a relationship with the e-commerce platform. |
| | STB2 | Some tactics used in this promotion offer integrated service with the e-commerce platform's partners. |
| | STB3 | I can transact in various ways through promotional tactics used in this promotion. |
| Promotion evaluation | PRE1 | I like this type of promotions a lot. |
| | PRE2 | I wish there were promotions like this. |
| | PRE3 | With this type of promotion, I feel like buying the product. |
| Brand awareness | BAW1 | I am aware of this platform. |
| | BAW2 | I am very familiar with this platform. |
| | BAW3 | When I think of e-commerce platforms, this platform is the first that comes to mind. |
| Brand association | BAS1 | This e-commerce platform is a very good platform. |
| | BAS2 | This e-commerce platform is a very nice platform. |
| | BAS3 | This e-commerce platform is an extremely likeable platform. |