Motivation for online impulse buying: A two-factor theory perspective

Louis Yi-Shih Lo\textsuperscript{a}, Sheng-Wei Lin\textsuperscript{b,*}, Li-Yi Hsu\textsuperscript{c}

\textsuperscript{a} Department of Management Information Systems, College of Management, Central Taiwan University of Science and Technology, No. 666, Buzhi Road, Taichung City 40601, Taiwan, ROC
\textsuperscript{b} Department of Computer Science and Information Management, School of Business, Soochow University, No. 56 Kueiyang Street, Section 1, Taipei 100, Taiwan, ROC
\textsuperscript{c} Department of Information Technology, SinoPac Bank, 3F, No.151, Sec. 6, Civic Blvd., Xinyi Dist., Taipei 10566, Taiwan, ROC

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\textbf{A B S T R A C T}

Impulse buying accounts for a large proportion of consumer shopping behavior in the bricks-and-mortar retail market. Online retailers also expect to profit from impulse buying. It is therefore interesting and beneficial to investigate the design elements of online stores and the sales promotion stimuli that e-retailers can use to either arouse consumers’ desire or decrease their self-control to evoke their purchase impulses. This study seeks to explicitly identify the factors associated with online store design and sales promotion stimuli that most affect online impulse buying behavior throughout the consumer decision-making process. Drawing on the two-factor theory, it successfully identifies the hygiene and motivation factors that trigger online impulse buying. The questionnaire responses of 239 valid respondents revealed that most of the hygiene factors are associated with the design of online stores, and all of the motivation factors are forms of sales promotion stimuli that effectively facilitate online impulse buying and present utilitarian or hedonic benefits to consumers. This study also identifies the most effective sales promotion stimuli and offers a comprehensive checklist for Web designers. Moreover, the distribution of motivation and hygiene factors for each stage of the EKB model is uneven, and some stages include only hygiene factors. The findings of this study demonstrate that the triggers of consumers’ online shopping behavior do not always apply to online impulse buying, and have important implications for impulse buying research and practice.

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1. Introduction

The e-commerce marketplace is growing rapidly. Forrester Research reported that e-retail sales in the US will increase from 334 billion dollars in 2015–480 billion in 2019 (Mulpuru, Boutan, Johnson, Wu, & Naparstek, 2015), with a compound annual growth rate of 10 percent, and the market share of e-retail sales will reach approximately 10 percent. The rapid growth of the online retailing market also indicates that many new retailers are planning to participate in e-commerce, creating plenty of competition in each market segment. Understanding the online behavior of consumers has therefore become a cornerstone for e-retailers, enabling them to strengthen their competitiveness or increase profits. Revenues are directly related to online shopping behavior, so this is obviously of great interest to e-retailers. Online shopping is an integrated manifestation of rational and irrational behavior (i.e., online impulse buying), with irrational online shopping behavior accounting for a large share of e-retailer revenue. Online impulse buying is a manifestation of consumers’ failure to control shopping impulses when encountering consumptive stimuli. In other words, consumers are torn between the desires evoked by consumptive stimuli and self-control (Baumeister, 2002, p. 671). Identifying the key factors that evoke online impulse buying is the focus of this study.

Self-control is an inherent individual ability, but desire, environmental stimuli, or continual decision-making can erode an individual’s stamina. If the capability for self-control is depleted, various types of impulse behavior are demonstrated, such as impulse buying (Baumeister, 2002). Environmental stimuli can deplete self-control stamina, and can be represented by the design elements of physical or online stores, although these types of shopping environment differ. In a physical store, stimuli can be designed to affect the five senses (i.e., vision, hearing, touch, smell, and taste) to induce the desire to shop, while in an online store, environmental stimuli are restricted to affecting vision or hearing. Exploring the factors of online store design that heighten consumers’ desire...
to shop, or weaken their self-control capability and evoke online impulse buying, is therefore interesting and enlightening. These factors may have an effect throughout the decision-making process. Identifying the online store design factors relevant to the different stages of consumers’ decision-making processes can enable e-retailers to use them effectively and induce online impulse buying.

Online impulse buying is also associated with e-retailers’ sales promotion stimuli (Dawson & Kim, 2010), which can therefore be regarded as another factor influencing this behavior. The association between sales promotion stimuli and an increase in consumers’ purchasing impulses, or a reduction in their self-control capability, is a subject worthy of further investigation that would be beneficial to the research field and to online store administrators. Product characteristics are also factors that can induce online impulse buying, but these are primarily controlled by manufacturers rather than e-retailers. Therefore, online store design factors and sales promotion stimuli are the focus of this study, as e-retailers can only manipulate consumers’ sense of vision and thus encourage impulse buying through these methods.

Based on the two-factor theory of job motivation (Herzberg, 2003; Herzberg, Mausner, & Snyderman, 1993), this study classifies online store design and sales promotion stimuli, which affect consumers’ online impulse buying, into hygiene and motivation factors. We assumed there is a consistency between the motives of e-retailers when encouraging impulse buying and those of organizations when encouraging employees to work harder. According to Herzberg’s theory, hygiene factors are the basic conditions used to judge whether consumers will remain in an online store and whether the self-control of consumers is reduced due to purchase uncertainty, while motivation factors are critical in deciding whether to purchase from a particular online store, and in enhancing the purchase impulse of consumers. In this study, two-factor theory is used to categorize online store design and sales promotion stimuli in online impulse buying.

We have identified three research areas that deserve further attention. The first is the relationship between online store design and a combination of planned and unplanned consumer purchase behavior (e.g., Chen, Hsu, & Lin, 2010; Lai, Chong, Ismail, & Tong, 2014; Liang & Lai, 2002; Song, Baker, Lee, & Wetherbe, 2012), where unplanned purchase behavior has been identified as being relatively irrational, and evoked by external stimuli. We argue that the triggers of consumers’ online shopping behavior do not always apply to online impulse buying. Second, investigations into the effects of external stimuli on consumers’ impulse buying classify the stimuli according to the product characteristics or the shopping environment, without reference to the consumer decision-making process, especially the Engel, Kollat, and Blackwell model (hereafter abbreviated as the EKB model). Thus, the distribution of external stimuli throughout the stages of the consumer decision-making process is unknown, and therefore designing specific stimuli to evoke consumers’ impulses or reduce their self-control at each stage is not possible (e.g., Madhavaram & Laverie, 2004; Parboteeah, Valacich, & Wells, 2009; Verhagen & van Dolen, 2011). Third, research has found a positive relationship between sales promotion stimuli and consumers’ purchase behavior, but does not explore how the sales promotion stimuli of various consumer benefits differ in their effects on impulse buying. The objectives of this study are to sort the stimuli affecting online impulse buying across the stages of the consumer decision-making process, and to differentiate the factors (i.e., motivation or hygiene) using the two-factor theory, with the intention of providing e-retailers with valuable suggestions. These objectives will help to answer the following research questions.

1. Which elements of online store design are hygiene or motivation factors that affect online impulse buying?

2. Which sales promotion stimuli are hygiene or motivation factors that affect online impulse buying?

3. How are hygiene and motivation factors in online impulse buying distributed across the stages of the consumer decision-making process?

Our study can benefit e-retailers by providing a better understanding of the antecedents of consumers’ online impulse buying. First, to the best of our knowledge, no previous study has examined the influence of website design factors and sales promotion stimuli on online impulse buying using the two-factor theory. By classifying 31 factors as either motivation or hygiene across each stage of the EKB model, their influence on online impulse buying can be understood. Second, this study includes nine sales promotion stimuli and ranks their effects on online impulse buying, which identifies the most effective sales promotion stimuli and offers a comprehensive checklist enabling web designers to organize the stimuli to encourage online impulse buying. Third, the distribution of motivation and hygiene factors for each stage of the EKB model is not even, and some stages only include hygiene factors. Our findings indicate that further effort is required to discover the motivators that reinforce online impulse buying at various stages.

The remainder of this paper is organized as follows. We review the relevant literature on the factors of online store design and sales promotion stimuli that motivate impulse buying or undermine the self-control of consumers. The research methodology and data analysis are then discussed. Finally, we present the results and discuss the implications.

2. Literature review

Literature review began with the definition of online impulse buying, and then based on six stages of the EKB model, identified online store design elements and sales promotion stimuli associated with online purchase intention along the references. Then, we introduced two-factor theory of job motivation and borrowed such concept to infer that the motivator can induce consumers’ online impulse buying, and hygiene factors can reduce the dissausive effect caused by uncertain information. Such inference drawing from two-factor theory formulate the statements listed on 3.1 Research Design, which underpinned the subjects’ judgment on motivation and hygiene factors.

2.1. Online impulse buying

Impulse buying, frequently categorized simply as the behavior of unplanned buying, was classified into four more detailed categories by Stern (1962): pure impulse buying, reminder impulse buying, suggestion impulse buying, and planned impulse buying. Pure impulse buying is the behavior of immediate buying through novelty or escape purchasing. Reminder impulse buying occurs when a shopper sees an item or recalls an advertisement about it and remembers that their stock of the item at home is exhausted or low, which sparks the impulse purchase. Suggestion impulse buying occurs when a shopper sees a product and visualizes a need for it, even if he or she has no previous knowledge of the product. Planned impulse buying occurs when a consumer has planned a specific purpose in advance, but focuses on promotions or discounts. These four different types provide a practical guide to identifying impulse buying, but conceptual definitions are lacking.

Rook (1987) regarded impulse buying as a different phenomenon from unplanned or contemplative buying. He defined it as the situation in which a consumer buys a product in a moment of sudden, forceful, and continual impulsiveness. This pleasant and complex impulse can trigger emotional conflicts. Impulse buying often occurs without regard for consequences (Rook, 1987), fre-
frequently halts the behavioral stream of consumers, and is a type of emotional behavior. Compared with contemplative buying it is therefore considered to be an undesirable form of behavior, and after impulse buying, consumers typically feel out-of-control.

The definition proposed by Rook (1987) was based on the impulses induced by physical stimuli (e.g., products). However, online stores cannot provide physical stimuli, and must rely on sensory information through interactive and mainly visual media. Madhavaram and Laverie’s (Madhavaram & Laverie, 2004) definition of online impulse buying incorporates the stimuli of the sensory information of online stores:

“Impulse buying is a result of a purchaser’s immediate reaction to external stimuli that is often hedonically charged. An impulse buying episode signifies a change in purchaser’s intention to purchase that particular product before and after exposure to stimuli. The stimuli are not limited to just the product, and change in purchaser’s intention does not include a reminder item that is simply out of stock at home.”

This definition has been widely cited (e.g., Parboteeah et al., 2009; Verhagen & van Dolen, 2011), and therefore this study adopts the definition of online impulse buying proposed by Madhavaram and Laverie (2004).

The design of online stores can undermine the self-control of consumers, in addition to using sensory information stimulation to evoke a purchase impulse. Baumeister (2002) indicated that self-control is made up of standards (objectives), a monitoring process, and operational capacity; if any of these components ceases to function, self-control fails. A strong operational capacity is particularly important, combining with the other two components to formulate effective self-control. The operation of self-control consumes an individual’s resources, and a task requiring self-control affects the strength and durability of the self-control available for a subsequent task. This phenomenon is called ego depletion, which leads to an increased possibility that the opinions of others will be adopted, and can cause an individual to be driven by instinct and intuitively select the most appealing option from a number of choices (Pocheptsova, Amir, Dhar, & Baumeister, 2009). We can therefore reasonably infer that as online shopping is typically a relaxing after-work activity, an easy to use website interface can reduce the resources required by consumers to perform a task, enabling them to stay longer in an online store. The simplification of the decision-making process increases the possibility that consumers will adopt the opinions and even the preferred products and services of others.

2.2. Effective online store design factors and sales promotion stimuli

Online impulse buying is a result of impulsiveness (Wells, Parboteeah, & Valacich, 2011), which occurs after specific atmospheric cues (Floh & Madlberger, 2013), so it cannot exclusively be interpreted as a personal trait. Online store design factors and sales promotion stimuli are therefore crucial antecedents of online impulse buying. Website navigation, visual appeal, and transaction safety are all atmospheric cues that can directly influence the possibility that consumers will experience buying impulses (Wells et al., 2011). Social cues on websites (e.g., online salespeople) can increase the hedonic and utilitarian value of consumers, and thus increase the possibility of buying (Wang, Baker, Wagner, & Wakefield, 2007). Sales (e.g., clearance, markups), promotions (e.g., buy one get one free, gift certificated, cash rebates), purchase ideas (e.g., one-stop shopping, new arrival products), and suggestions (e.g., bundling) are sales promotion stimuli that can induce buying impulses (Dawson & Kim, 2010).

Online store design factors have previously been categorized by the stages of the consumer decision-making process, so the relationship between design elements and consumer purchase intention can be investigated (e.g., Liang & Lai, 2002). This enables academics and practitioners to explicitly identify the most relevant factors in each decision-making stage, and this categorization is used as the reference structure for this study. To research impulse buying behavior, interesting and effective design elements (e.g., virtual layouts) have frequently been used, and their influence on impulse buying examined (e.g., Floh & Madlberger, 2013; Lin & Lo, 2015; Liu, Li, & Hu, 2013). Online store design is a complex task involving multiple webpage elements. Specific design elements have been investigated using simple research models, but this does not provide a complete picture of the triggers of impulse buying. Design elements may influence each stage of the decision-making process, reducing the self-control of consumers or enhancing the possibility of impulse buying. Sales promotion stimuli can evoke impulse buying. They communicate that an impulse has not been satisfied, and may cause the consumer to experience regret over a missed opportunity, i.e., pre-purchase regret (Sears, 2006). The experience of regret is a threat to one’s self-image, and people minimize regret to defend that self-image (Zeelenberg & Pieters, 2004). One way to defend one’s self-image is to emulate a master plan ahead of the purchase impulse. This can effectively weaken consumers’ self-control, increase their anticipated rejoicing over a purchase, and encourage their impulse buying behavior. Thus, sales promotion stimuli are interesting and important factors that weaken self-control and increase impulse buying. However, previous studies have focused on specific sales promotion stimuli, such as price-offs, coupons, and sweepstakes, and a complete picture of the effects that sales promotion stimuli have on online impulse buying is lacking. Thus, to the best of our knowledge, simultaneously incorporating the design elements of online stores and sales promotion stimuli and exploring the effect these factors have on impulse buying has not been previously accomplished. We use the consumer decision-making model as a framework to categorize the design elements of online stores and sales promotion stimuli, examining the influence they have on consumer impulse buying during specific stages in the decision-making process.

A consumer decision-making model simplifies complex consumer behavior through an abstract representation of the decision-making process. This simplified picture can help salespeople effectively understand consumers’ responses toward marketing efforts. The model developed by Engel, Kollat, and Blackwell (the EKB model) is a widely used consumer decision-making model made up of six stages: need recognition, searching for information, pre-purchase evaluation of alternatives, choice, transaction, and post-sale services (Engel & Blackwell, 1982).

2.2.1. Need recognition

Need recognition refers to consumers’ perceived need for products before purchase, which can be generated by external stimuli or the intrinsic motivation of consumers. The design of online stores can act as external stimuli, evoking or strengthening existing needs that individuals may be unaware of (Liang & Lai, 2002). The following characteristics of online store designs can potentially enable consumers to recognize these needs.

2.2.1.1. Easy initial engagement. 1. Ease-of-use website interfaces: These can reduce the cognitive load of consumers during use (e.g., Chen et al., 2010; Parboteeah et al., 2009).

2. Websites mainly consisting of product pictures: These can reduce text descriptions and increase consumers’ product recognition (e.g., Parboteeah et al., 2009).

3. Product organization: Products in online stores cannot be physically examined, and therefore the well-organized display
of products may reduce the cognitive load of consumers (e.g., Verhagen & van Dolen, 2011).

4. Using pictures instead of text in product detail webpages: Images can help consumers formulate their product expectations as they cannot physically examine the products. Gaps in the product expectations before and after purchase can be reduced by using images rather than text descriptions (e.g., Eroglu, Machlet, & Davis, 2001).

2.2.1.2. Shopping navigation. Online stores may sell various products, so their websites must have clear navigation guides. The navigation approaches commonly used involve:

5. Website navigation: A clear stage-by-stage guide can smoothly lead consumers from searching for products to completing the transaction, reducing the likelihood that they experience disorientation or an increase in the cognitive load (e.g., Liang & Lai, 2002; Park & Gretzel, 2010).

6. Using appropriate fonts: Easy to read fonts in a color that clearly contrasts with the backgrounds effectively convey information and reduce the cognitive load (e.g., Eroglu et al., 2001).

2.2.1.3. Stimulating purchase desire. 7. Colorful layouts: Colors used on webpages can evoke consumers’ emotions, so striking color combinations based on a store’s theme can stimulate consumer purchase desire (e.g., Loiacono, Watson, & Goodhue, 2007).

8. Sending out product catalogs or promotional information: A new season’s catalog or the latest discounts often attract impulse consumers.

9. Large eye-catching titles: Often used on clearance or price reduction alerts, these can trigger consumers’ purchase impulses (e.g., Madhavaram & Laverie, 2004).

10. Providing product previews or virtual fitting rooms: Giving a sense of how products are used or how customers look after trying a product can reduce pre-purchase uncertainty (e.g., Eroglu et al., 2001).

2.2.1.4. Providing reference groups. 11. Providing online chat rooms: An important feature, enabling consumers to exchange opinions, reduces doubt during transactions, and increases purchase impulses (e.g., Chen et al., 2010; Liang & Lai, 2002).

12. Providing seller ratings: These effectively convey the reliability and popularity of sellers, decreasing the uncertainty consumers may feel toward them (e.g., Dawson & Kim, 2010).

13. Providing peer recommendations: Peers typically have similar preferences or needs, and thus their recommendations often fulfill the expectations of consumers (e.g., Baumeister, 2002).

2.2.2. Search for information

If products or services enable consumers to solve problems, achieve goals, and generate perceived goal value, further attention will be paid to information relevant to these positive outcomes. Providing and reinforcing the function of information searching can reduce the cognitive noise that disturbs consumer attention.

14. Providing a fast product search: Effective search functions or well-organized search results on a website enable consumers to efficiently find products or services that satisfy their goals (e.g., Chen et al., 2010; Liang & Lai, 2002).

15. Providing value-added information: Knowledge of the season’s or the year’s best products enables consumers to easily grasp popular items (e.g., Liang & Lai, 2002).

2.2.3. Pre-purchase evaluation of alternatives

After searching for information, consumers enter the third stage: the pre-purchase evaluation of alternatives. Consumers evaluate the possible purchase plans based on the information acquired from the second stage. The various attributes that may affect how consumers evaluate products, such as price, size, and number, are weighted according to preferences and appraised, before they choose the most ideal from the selection.

2.2.3.1. Providing product price comparison. 16. Providing online price comparison systems: Price exerts the most direct and effective influence on consumer purchase decision-making and comparison systems can assist consumers with their decision-making processes (e.g., Chen et al., 2010; Liang & Lai, 2002).

2.2.3.2. Building trust. Building trust is extremely important for consumers who are not familiar with transaction procedures. Possible approaches include the following:

17. Providing store locations and transportation: Online companies with physical storefronts can relieve the transaction uncertainty experienced by consumers (e.g., Eroglu et al., 2001; Park & Gretzel, 2010).

18. Offering VIP member service: Maintaining relationships with a group of loyal clients can sustain their affective and conative loyalty (e.g., Liang & Lai, 2002).

19. Providing member center: These list frequently asked questions (FAQs) or track the progress of problem solving, so member centers can reduce transaction uncertainty and establish client confidence in transactions (e.g., Eroglu et al., 2001).

20. Member confidentiality and security: As sellers and buyers do not meet during transactions, if the personal data of members are protected, secure electronic transaction systems used, and transactions authenticated, the transaction uncertainty experienced by consumers can be effectively reduced (e.g., Chen et al., 2010; Parboteeah et al., 2009).

2.2.3.3. Sales promotions. Sales promotions, as a collection of various motivational tools, are designed to stimulate consumers to purchase numerous products or services within short periods of time (Kotler, 2012). The purpose is to exert immediate influence on consumers’ purchase behavior (Blattberg & Neslin, 1990). The immediate reward implied in sales promotions is similar to the concept of impulse buying when “only an immediate purchase could complete the marketplace exorcism” (Rook & Hoch, 1985: p. 25). The consumer benefits of sales promotions can be divided into utilitarian benefits (e.g., saving money, convenience) and hedonic benefits (e.g., value, exploration, and entertainment). Chandon, Wansink, and Laurent (2000) proposed the benefit congruence framework of sales promotion, arguing that sales promotion effectiveness is determined by the utilitarian or hedonic nature of the benefits it delivers and the congruence the benefits have with the promoted product. Chandon et al. (2000) further found that the utilitarian benefits consumers derive from sales promotion stimuli are monetary savings, quality, and convenience; their hedonic benefits are value expression, exploration, and entertainment. Therefore, the impulse-buying scenario should include a sales promotion stimulus that can generate the maximum utility. In this study, we collected the sales promotion stimuli frequently used by online stores, and categorized them referring to the benefit congruence framework. Fig. 1 depicts the categorization results, and the sales promotion stimuli are as follows.

21. Buy one get one free: Products or services are sold using the promotion of buy one get one free, or buy one, receive 50% off the second. This type of sales promotion creates utilitarian (e.g., monetary savings) and hedonic benefits (e.g., value creation) for consumers. According to the benefit congruence framework (Chandon et al., 2000), this type of promotion is similar to a free product, which possesses high utilitarian and hedonic benefits, and may trigger the buying impulse of consumers.

22. Limited time sales: Products or services are sold at discounted prices within specific and extremely short durations.
When the time limit is exceeded, original prices are restored. Few people learn of the discount information, and therefore this type of sales promotion can generate utilitarian benefits (e.g., monetary savings and quality) and hedonic benefits (e.g., value creation) for consumers (Chandon et al., 2000), and may trigger the buying impulse of consumers.

23. Group-buying promotional programs: Group buying promotions, which are similar to limited time sales, have limitations on the number of participants. The promoted products are typically newly released or have little visibility. This type of sales promotion can create utilitarian benefits (e.g., monetary savings) and hedonic benefits (e.g., value creation and exploration) for consumers (Chandon et al., 2000), and may trigger the buying impulse of consumers.

24. Limited amounts of products for sale: Products or services are sold at discounted prices as only limited amounts are provided. This type of sales promotion can create utilitarian benefits (i.e., saving money) for consumers. Price reductions are categorized as having high utilitarian and low hedonic benefits.

25. Price reductions: A product is sold for under the usual or advertised price. This type of sales promotion can create utilitarian benefits (i.e., saving money) for consumers. Price reductions are categorized as having high utilitarian and low hedonic benefits.

26. Bonus reward: Previous cumulative purchase amounts are converted into reward points that can offset part of the current purchase amount. This type of sales promotion can generate utilitarian benefits (i.e., saving money) for consumers, and is similar to the rebates in the benefit congruence framework (Chandon et al., 2000), and is categorized as having high utilitarian and low hedonic benefits.

27. Promotions for newly released branded products: Consumer curiosity about new products can be stimulated by newly released products; however, price reductions are rarely offered. This type of sales promotion can create hedonic benefits (i.e., exploration) for consumers, and is categorized as having high hedonic and low utilitarian benefits.

28. Gifts with purchase: Gifts are offered to consumers when purchase amounts exceed a specific sum. Similar to the rebates in the benefit congruence framework (Chandon et al., 2000), this type of sales promotion can create utilitarian benefits (i.e., saving money) for consumers, and is categorized as having high utilitarian and low hedonic benefits.

29. Products of unfamiliar brand in the domestic market: Unlike the releasing of new products, these products are not domestically produced or exported by distributors, are available in the market for a short time, and are usually limited in quantity. Consumers who are prone to be early adopters are therefore easily attracted by the hedonic benefits before purchase. This type of sales promotion is categorized as having high hedonic and low utilitarian benefits (Chandon et al., 2000).

2.2.4. Choice

After the evaluation stage, consumers need tools to aggregate purchase information so they can make a decision. Online stores should provide functions enabling consumers to make choices easily and recommend items they may be interested in purchasing.

30. Providing shopping carts: Necessary for online stores, shopping carts can be used by consumers to calculate total amounts or shipping and taxes (e.g., Liang & Lai, 2002).

31. Online customer service staff: These can be actual salespeople or intelligent agents whose main task is to provide professional knowledge about particular products and interact with consumers, thereby reducing doubt. If these staffs can promote products or services, the buying impulse of consumers will be enhanced (e.g., Liang & Lai, 2002; Park & Gretzel, 2010).

2.2.5. Transaction

Once a product is chosen, the customer must provide ordering, payment, and shipping data. The functions provided by online stores include the following:

32. Ease of registration: Many online stores require customers to be members before placing orders, making payments, and requesting delivery. Therefore, easy registering procedures can maintain the buying impulses of consumers (e.g., Liang & Lai, 2002).

33. A fully electronic purchase process: This enables consumers to place, change, and cancel orders online. Placing orders online can effectively relieve consumer hesitation. Changing and cancelling orders online decreases consumer apprehension about impulse buying and potential difficulties they may encounter when cancelling orders (e.g., Loiacono et al., 2007).

34. Home delivery services: Consumer concerns about the inconvenience of receiving products can be alleviated by home delivery arrangements (e.g., Liang & Lai, 2002).

35. Free shipping: This enables consumers to consider only the reward of products, and thereby reduces hesitation arising from the major concern of shipping costs (e.g., Dawson & Kim, 2010).
36. Multiple payment methods: These include credit cards, paying for and receiving products at local convenience stores, payment on delivery, or third-party payments (e.g., Chen et al., 2010; Liang & Lai, 2002).

2.2.6. Post-sales services

The final stage is post-sales services. After a transaction, the ease of accessing the product delivery status and the quality of post-sales services influence the levels of consumer satisfaction, as if these conditions are fulfilled consumers will be satisfied, and if not, dissatisfaction will result (Engel & Blackwell, 1982). If stores can create higher levels of satisfaction, they can lessen consumer price sensitivity and also attract new shoppers (Engel & Blackwell, 1982).

37. Order status inquiries and tracking: Enabling consumers to track their order status reduces the risk of consumer hesitation to impulse buy, which is a risk if information is ambiguous (e.g., Liang & Lai, 2002).

38. Return services: Consumers are informed of any returns policy (e.g., Chen et al., 2010; Dawson & Kim, 2010).

In summary, online stores can provide effective design factors or sales promotion stimuli to satisfy consumers’ needs at each stage of the EKB model, enhancing the buying impulse or reduce self-control. Table 1 summarizes 38 design factors or sales promotion stimuli commonly used by online stores to encourage impulse buying.

2.3. Herzberg’s two-factor theory

This study uses the two-factor theory, proposed by Herzberg et al. (1993) to explain the motivation of workers, to categorize the factors involved in the various stages of the EKB model. Herzberg et al. (1993) identified two types of factors that can influence the motivation of workers: hygiene factors and motivation factors. Hygiene factors refer to the contextual features of organizations that support workers (e.g., salary, company policy, work conditions, relationships with supervisors). Without these, employees may harbor grievances against organizations. Motivation factors represent the content features of the work itself and the direct reward gained through satisfactory job performance (e.g., sense of accomplishment, appreciation from supervisors or colleagues) (Herzberg, 2003). Motivation factors can strengthen the desire for self-realization through work. Hygiene and motivation factors are correlated with job dissatisfaction and satisfaction, respectively. However, they are not at opposite ends of a spectrum but instead represent two distinctive spectra. When factors of high satisfaction disappear, dissatisfaction is not caused (House & Wigor, 1967). Hygiene factors are necessary, but are insufficient to solely produce satisfaction. The two-factor theory has been widely applied to establish the motivation factors of work content. The theory has also been used to investigate the behavior motivation induced by Internet services (e.g., Liang & Lai, 2002; Ong, Chang, & Lee, 2013; Park & Ryoo, 2013; Wu, Chwang, & Chen, 2008). For online stores, as Liang and Lai (2002) stated, hygiene factors are the basic conditions used to judge whether consumers will enter the e-marketplace, whereas motivation factors are crucial for deciding whether to purchase from a particular online store. This study asserts that online impulse buying was (a) evoked by sensory information, and (b) prompted by the diminishing of self-control by the interface design. According to the two-factor theory, motivation factors are correlated with satisfaction, whereas hygiene factors are correlated with dissatisfaction. We can reasonably infer that motivation factors can boost the purchase impulse of consumers and hygiene factors can reduce the dissuasive effect caused by uncertain information, and further inhibit the operation of self-control.

3. Research methods

To distinguish the influences design factors and sales promotion stimuli of online stores exert on consumers’ impulse buying, this study categorizes the factors according to the two-factor theory, dividing them into hygiene and motivation factors. Hygiene factors are necessary conditions during purchase (Wu et al., 2008), as they relieve the uncertainty experienced during purchase; however, sufficient hygiene factors do not necessarily trigger the purchase impulses of consumers. Motivation factors promote or stimulate consumption (Liang & Lai, 2002), and can therefore facilitate the impulse buying of consumers. We assume that motivation factors enhance purchasing impulses and hygiene factors eliminate uncertainty, but motivation factors may also eliminate uncertainty. If an online store uses motivation factors in its design or sales promotion stimuli, these can stimulate impulse buying more effectively than hygiene factors.

In the IS literature, two research streams build hypotheses based on the two-factor theory. In the first stream, authors subjectively classify the associated factors identified in the literature into motivation and hygiene categories and continue to test their effects on dependent variables, such as retaining or attracting users (Wu et al., 2008) or the willingness to visit or purchase in the future (Liang & Lai, 2002). These researchers also conduct experiments or surveys to validate their subjective two-factor classification. They require their subjects’ endorsement to support their conjecture and thus develop and validate their hypotheses.

In the second stream, as researchers are unaware of the effects that motivation and hygiene have on their dependent variables, they consider the factors identified in other studies, administer surveys, and present the findings derived from their subjects’ judgments of motivation and hygiene (Zhang & von Dran, 2000). The subjects’ judgments of the classification of motivational and hygiene-related effects comprise a mechanism similar to the hypothesis-testing mechanism implemented in the first research stream. The decision to classify motivational and hygiene-related effects according to either researchers or subjects determines which research stream is adopted. The researcher is a competent and authoritative interpreter of classification who can grasp the meaning of motivation and hygiene factors, and at the same time is a representative consumer for the research (Kim & Stepchenkova, 2015). As expert and non-expert viewers interpret the motivation- and hygiene-related classifications of online store design elements and sales promotion stimuli differently, they present an internal contradiction. To address this internal contradiction, this study makes classification statements and enables its subjects to classify the motivation and hygiene factors, thereby improving its rigorousness. This study follows the second research stream and considers its lack of proposed and validated hypotheses a minor issue.

3.1. Research design

In this study, we collected respondent opinions about the factors affecting online impulse buying through the survey method. The questionnaire comprised of four sections: (a) the definition of online impulse buying; (b) categorization of the factors generating online impulse buying; (c) online shopping experiences; and (d) demographic information. The items pertaining to the definition of online impulse buying ensured that respondents understood the definition, and those relating to online shopping experiences verified that respondents were representative of online impulse buying consumers.

Respondents were first required to read the definition of online impulse buying and complete a definition test, to ensure they clearly understood the definition. The system then provided a scenario and asked respondents to recall their most recent online
impulse purchase. They were instructed to classify the factors in either category through two statements: (a) This factor encourages my tendency toward impulse buying (evoking impulse buying: motivation factor); (b) I regard this factor to be an essential element of online shopping (reducing self-control: hygiene factor). All of the factors affecting impulse buying were randomly arranged. The respondent selected the category they considered appropriate for each factor. Every factor was represented by images; for example, use of appropriate fonts on webpages and large titles to attract consumers were displayed with corresponding pictures, to enable respondents to clearly understand the factor meaning. As the investigation is into online impulse buying, the respondents were required to have online shopping experience. Before conducting data analysis, the data from respondents with no online shopping experience were removed. The demographic characteristics of respondents, such as gender, age, educational background, and monthly personal budget were collected.

We conducted data analysis on the retrieved questionnaires to determine the category of each factor. According to the definition of the two-factor theory, factors were classified into hygiene or motivation and ranked against the frequencies marked accordingly in the questionnaires. To ensure the factors included in the instrument were well understood, we conducted a pretest before embarking on the main study.

### 3.2. Pretest

A pretest questionnaire survey was administered to ensure the quality of our measurement instrument. We recruited 30 participants with online shopping experience. The 38 factors affecting online impulse buying were categorized into hygiene and motivation by the respondents, according to the two aforementioned statements. The volunteer respondents in the pretest were 15 males and 15 females between the ages of 20 and 30, over 60% of whom had graduate degrees. All of the pretest respondents had over a year’s online shopping experience. Seven of the 38 factors (Factors 4, 7, 8, 10, 15, 16, and 18) were insignificant in Z-testing, suggesting that the respondents did not reach a consensus on them, and they were removed in the following test. The measurement instrument administered for this study then totaled 31 factors.

### 3.3. Data collection and sample characteristics

The intensity of high-tech industry in Taiwan has nurtured a market that readily embraces Internet technology and services. With a high penetration of e-commerce, Taiwan is a suitable environment for conducting this study. A web survey link was posted on the PTT, the largest bulletin board system in Taiwan (http://www.ptt.cc/bbs/index.html), with over 1.5 million registered users and over 200,000 discussion boards on various topics. On average, more than 40,000 articles and one million comments are posted on PTT every day. The topic of the discussion board “e-shopping” was highly relevant to our study, and was therefore the data source for the survey. Every respondent was rewarded with 200 P-coins (virtual money used on PTT).

Collecting the 248 responses took four weeks. Of these, 239 were included in the final analysis, as nine respondents had no online experience or failed to pass the definition testing. The valid
response rate of this study is therefore 96%. The descriptive statistics of the respondents’ demographic information showed that the sample was made up of 129 (54%) males and 110 (46%) females. Bachelor’s or Master’s degrees were held by 94% of the respondents. The gender ratio and educational backgrounds of the respondents were in line with those obtained from the 2012 Taiwan Netizen Profile survey (TWNIC, 2012). Most respondents were consumers under 35, as 85% were between the ages of 21 and 35, but the age ratio was not a major concern. Consumers with online shopping experience were expected to be younger than those without, as online shopping is riskier behavior than shopping at physical stores, and older consumers are more risk-averse (Chowdhry, 2011), and are therefore less likely to purchase online. We believe the respondents were appropriate for this research, as they were capable of understanding and categorizing impulse buying factors, based on their online shopping experience.

3.4. Data analysis

We obtained our results by calculating the frequency that each factor was categorized as evoking impulse buying (motivation factor) or reducing self-control (hygiene factor). The assumption in statistics stated that the respondents had no preferences toward the classification of design factors or sales promotion stimuli, and thus the mean proportion of sampling distribution of each factor randomly categorized as a motivation factor is 0.5, which is the same as that of each classified as a hygiene factor. According to the Central Limit Theorem, when a sample number is more than 30, the sampling distribution of the sample mean becomes normal (Shayib, 2013). A Z-test can be used to examine whether there is a significant preference for the choice of each factor, so this was used to examine the difference in the preference of classification of each factor.

4. Results

4.1. Results for the hygiene and motivation factors

The online survey was administered to categorize the 31 factors as either hygiene or motivation, and the results are shown in Fig. 2. The 31 factors are arranged according to the frequencies of the motivation factor (in descending order) and the hygiene factor (in ascending order). All factors were numbered as in Table 1. Motivation and hygiene factors are denoted by blue and orange bars, respectively, enabling them to be visually distinguished. The motivation factor frequency for each factor was found to be significantly different from its hygiene frequency. For example, Factor 21 was categorized as a motivation factor 218 times but only 21 times as a hygiene factor.

Columns 3 and 4 of Table 2 showed the frequencies of the 31 factors categorized as motivation or hygiene. Columns 5 and 6 show the percentage that each factor was categorized as motivation or hygiene, respectively. Column 7 shows that the difference between the motivation and hygiene factor percentage for each factor was examined through a Z-test. If the motivation percentage for each factor was higher than the hygiene percentage, its Z-score is positive, otherwise it is negative. The last column of Table 2 indicates the statistical significance of Z-distribution testing for the Z-score of each factor. Of the 31 factors, 13 had positive Z-scores, so were more likely to be categorized as motivators; the other 18 had negative Z-scores, so had a relatively high likelihood of being categorized as hygiene factors.

4.1.1. Hygiene and motivation factors for each stage of the EKB model

Figs. 3–5 give the distribution of hygiene and motivation factors against six stages of the EKB model. For the need recognition stage, three factors of online store design, Factors 13 (peer recommendations), 9 (large titles), and 11 (online chat rooms), evoked online impulse buying, and were therefore motivation factors of online impulse buying (see Fig. 3). The other six were hygiene factors; they could not trigger impulse buying but did reduce self-control. For example, Factor 2 (websites mainly consisting of product pictures) could reduce hesitation induced by uncertainty, decrease the dissuasion effect caused by uncertain information, and inhibit the effects of self-control; hence, Factor 2 was a hygiene factor.

Several factors related to the stage of need recognition derived from previous studies seem to overlap, i.e., Factors 1 (ease-of-use website interfaces), 5 (website navigation), 2 (websites mainly consisting of product pictures), and 4 (using pictures instead of text in product detail webpages). Following a pretest, Factors 1, 2, and 5 were classified as hygiene factors, but Factor 4 was removed and the equivocality between Factors 2 and 4 was clarified. The survey administered on the PTT further distinguished Factors 1 and 5, which mitigated our concern about any ambiguity between Factors 1 and 5. This result complements the second-stream research approach taken by this study, in which the researchers merely collected factors from other studies and relied on its subjects’ judgments about motivation and hygiene factors. This result also demonstrates the rigorousness of the second research stream because it avoided the abrupt merger or removal of factors arising from the researchers’ subjective judgments.
Table 2

The frequency of each factor and statistics of Z-testing.

<table>
<thead>
<tr>
<th>Num</th>
<th>Factor description</th>
<th>Frequency of motivator</th>
<th>Frequency of hygiene</th>
<th>Percent of motivator</th>
<th>Percent of hygiene</th>
<th>Z-score</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motivator 21</td>
<td>Buy one get one free</td>
<td>218</td>
<td>21</td>
<td>0.91</td>
<td>0.09</td>
<td>12.74</td>
<td>**</td>
</tr>
<tr>
<td>23</td>
<td>Group buying promotional programs</td>
<td>198</td>
<td>41</td>
<td>0.83</td>
<td>0.17</td>
<td>10.16</td>
<td>**</td>
</tr>
<tr>
<td>22</td>
<td>Limited time sales</td>
<td>191</td>
<td>48</td>
<td>0.80</td>
<td>0.20</td>
<td>9.25</td>
<td>**</td>
</tr>
<tr>
<td>24</td>
<td>Limited amounts of products for sale</td>
<td>187</td>
<td>52</td>
<td>0.78</td>
<td>0.22</td>
<td>8.73</td>
<td>**</td>
</tr>
<tr>
<td>28</td>
<td>Gifts with purchase</td>
<td>173</td>
<td>66</td>
<td>0.72</td>
<td>0.28</td>
<td>6.92</td>
<td>**</td>
</tr>
<tr>
<td>25</td>
<td>Product discounts</td>
<td>172</td>
<td>67</td>
<td>0.72</td>
<td>0.28</td>
<td>6.79</td>
<td>*</td>
</tr>
<tr>
<td>13</td>
<td>Peer recommendations</td>
<td>171</td>
<td>68</td>
<td>0.72</td>
<td>0.28</td>
<td>6.66</td>
<td>**</td>
</tr>
<tr>
<td>35</td>
<td>Free shopping</td>
<td>168</td>
<td>71</td>
<td>0.70</td>
<td>0.30</td>
<td>6.27</td>
<td>**</td>
</tr>
<tr>
<td>9</td>
<td>Large titles</td>
<td>161</td>
<td>78</td>
<td>0.67</td>
<td>0.33</td>
<td>5.37</td>
<td>**</td>
</tr>
<tr>
<td>26</td>
<td>Bonus reward</td>
<td>154</td>
<td>85</td>
<td>0.64</td>
<td>0.36</td>
<td>4.46</td>
<td>**</td>
</tr>
<tr>
<td>27</td>
<td>Promotions for newly released products</td>
<td>154</td>
<td>85</td>
<td>0.64</td>
<td>0.36</td>
<td>4.46</td>
<td>**</td>
</tr>
<tr>
<td>29</td>
<td>Products of a brand not seen in domestic market</td>
<td>154</td>
<td>85</td>
<td>0.64</td>
<td>0.36</td>
<td>4.46</td>
<td>**</td>
</tr>
<tr>
<td>Hygiene 2</td>
<td>Website mainly comprising product pictures</td>
<td>104</td>
<td>135</td>
<td>0.44</td>
<td>0.56</td>
<td>–2.01</td>
<td>*</td>
</tr>
<tr>
<td>34</td>
<td>Home delivery service</td>
<td>86</td>
<td>153</td>
<td>0.36</td>
<td>0.64</td>
<td>–4.33</td>
<td>**</td>
</tr>
<tr>
<td>36</td>
<td>Multiple payment methods</td>
<td>80</td>
<td>159</td>
<td>0.33</td>
<td>0.67</td>
<td>–5.11</td>
<td>**</td>
</tr>
<tr>
<td>12</td>
<td>Seller ratings</td>
<td>73</td>
<td>166</td>
<td>0.31</td>
<td>0.69</td>
<td>–6.02</td>
<td>**</td>
</tr>
<tr>
<td>5</td>
<td>Website navigation</td>
<td>64</td>
<td>175</td>
<td>0.27</td>
<td>0.73</td>
<td>–7.18</td>
<td>**</td>
</tr>
<tr>
<td>31</td>
<td>Online sales person</td>
<td>58</td>
<td>181</td>
<td>0.24</td>
<td>0.76</td>
<td>–7.96</td>
<td>**</td>
</tr>
<tr>
<td>17</td>
<td>Providing store locations</td>
<td>51</td>
<td>188</td>
<td>0.21</td>
<td>0.79</td>
<td>–8.86</td>
<td>**</td>
</tr>
<tr>
<td>32</td>
<td>Ease of registration</td>
<td>51</td>
<td>188</td>
<td>0.21</td>
<td>0.79</td>
<td>–8.86</td>
<td>**</td>
</tr>
<tr>
<td>38</td>
<td>Return services</td>
<td>51</td>
<td>188</td>
<td>0.21</td>
<td>0.79</td>
<td>–8.86</td>
<td>**</td>
</tr>
<tr>
<td>14</td>
<td>Rapid search</td>
<td>48</td>
<td>191</td>
<td>0.20</td>
<td>0.80</td>
<td>–9.25</td>
<td>**</td>
</tr>
<tr>
<td>33</td>
<td>Fully electronic purchase process</td>
<td>48</td>
<td>191</td>
<td>0.20</td>
<td>0.80</td>
<td>–9.25</td>
<td>**</td>
</tr>
<tr>
<td>37</td>
<td>Order status inquiries and tracking</td>
<td>43</td>
<td>196</td>
<td>0.18</td>
<td>0.82</td>
<td>–9.90</td>
<td>**</td>
</tr>
<tr>
<td>30</td>
<td>Providing shopping carts</td>
<td>42</td>
<td>197</td>
<td>0.18</td>
<td>0.82</td>
<td>–9.90</td>
<td>**</td>
</tr>
<tr>
<td>19</td>
<td>Product categorization</td>
<td>41</td>
<td>198</td>
<td>0.17</td>
<td>0.83</td>
<td>–10.16</td>
<td>**</td>
</tr>
<tr>
<td>6</td>
<td>Using appropriate fonts</td>
<td>37</td>
<td>202</td>
<td>0.15</td>
<td>0.85</td>
<td>–10.67</td>
<td>**</td>
</tr>
<tr>
<td>20</td>
<td>Member confidentiality and security</td>
<td>34</td>
<td>205</td>
<td>0.14</td>
<td>0.86</td>
<td>–11.06</td>
<td>**</td>
</tr>
<tr>
<td>1</td>
<td>Ease-of-use website interfaces</td>
<td>32</td>
<td>207</td>
<td>0.13</td>
<td>0.87</td>
<td>–11.32</td>
<td>**</td>
</tr>
</tbody>
</table>

* p < 0.05.  
** p < 0.01.

Fig. 3. The frequency distribution of hygiene and motivation factors in the stage of need recognition.

The factors involved in the stages of information searching, choice, and post-sales services were all hygiene factors for online impulse buying (see Fig. 4). The results indicated that Factors 14 (rapid search), 30 (providing shopping carts), 31 (online customer service staff), 37 (order status inquiries and tracking), and 38 (return services) eliminated dissatisfaction arising from the uncertainty experienced in these stages, and were therefore hygiene factors.

Unlike the three stages shown in Fig. 4 that retained only hygiene factors, the stages of pre-purchase evaluation of alternatives and transaction exhibited motivation and hygiene factors for online impulse buying (see Fig. 5). Factors 21–29 of the pre-purchase evaluation stage were sales promotion stimuli and also motivation factors for online impulse buying. The design factors of online stores (i.e., Factors 17, 19, and 20) were hygiene factors. All
Factors of the transaction stage were hygiene, except for Factor 35 (free shipping). The results indicated that Factors 32 (ease of registration), 33 (fully electronic purchase process), 34 (home delivery services), and 36 (multiple payment methods) simply reduced the uncertainty of online shopping. Factor 35 (free shipping), however, could trigger the impulse of online buying at the transaction stage.

4.1.2. Sales promotion stimuli classified by benefits

The sales promotion stimuli usually experienced by online consumers at the pre-purchase evaluation stage were integrated from Factors 21–29. According to the benefit congruence framework of Chandon et al. (2000) and our literature review, high utilitarian and hedonic benefits were generated from Factors 21–24, high utilitarian and low hedonic benefit arose from Factors 25, 26, and 28, and the benefit derived from Factors 27 and 29 was low utilitarian and high hedonic. The nine sales promotion stimuli listed above were all categorized as motivation factors as they generated utilitarian or hedonic benefits that enhance consumers’ feelings of enjoyment, increasing their impulses when online shopping. Factors 21–24 were the most frequently categorized as motivation as they simultaneously increased utilitarian and hedonic benefits (see Fig. 6). The frequency of categorization of Factors 25, 26, and 28 as motivation is higher than for 27 and 29. Sales promotion stimuli were therefore found to generate high utilitarian benefits, and to be more likely to evoke online impulse buying than factors with high hedonic benefits.

5. Discussion and implications

This study divided the factors of online store design and sales promotion stimuli into hygiene and motivation for online impulse buying, and presents the distribution of those factors over consumer decision-making processes. We conclude by discussing possible limitations and directions for future research.

5.1. Summary of results

Drawing on the two-factor theory, our results indicate that the motivation and hygiene factors that trigger online impulse buying are clearly distinguishable. Of the 22 online store design elements included in this study, only Factors 9 (large titles), 11 (online chat rooms), 13 (peer recommendations), and 35 (free shipping) had a motivation effect on consumers’ online impulse buying, with the other factors having a hygiene effect. The nine sales promotion stimuli included in this study were motivators of online impulse buying. Moreover, the motivation effect of the stimuli integrating both hedonic and utilitarian benefits had more influence on consumers’ online impulse buying than those providing either benefit.

Hygiene factors affected online impulse buying across six stages of the consumer decision-making process: need recognition (Fig. 3), searching for information, choice, post-sales services (Fig. 4), pre-purchase evaluation of alternatives, and transaction (Fig. 5). A lack of hygiene factors in online impulse buying has the potential to
increase consumer caution over uncertain information, decrease the persuasive efficacy of online store design or sales promotion stimuli, increase consumer self-control, and inhibit online impulse buying.

Motivation factors affected online impulse buying distributed across three stages: need recognition, pre-purchase evaluation of alternatives, and transaction. At the need-recognition stage, motivation factors were associated with the design of online stores (large, eye-catching titles) and the third-party information they provided (peer recommendations and online chat rooms). Third-party information can incorporate the assessment of experienced consumers or unbiased consumer reviews and so is considered more persuasive. We can therefore reasonably infer that third-party information generates or influences the needs of consumers and enhances their online impulse buying. At the stage involving pre-purchase evaluation of alternatives, the nine factors of sales promotion were motivational (Fig. 5). At this stage, consumers are more likely to be concerned about the hedonic or utilitarian benefits of sales rather than the design of the online store. Sales promotion stimuli must therefore be emphasized before a transaction. At the transaction stage, only free shipping services were a motivation factor.

Almost all of the motivation factors identified to induce online impulse buying were sales promotion stimuli, which can create utilitarian or hedonic benefits for consumers. Utilitarian benefits denote the saving of money or provision of convenience, and hedonic benefits involve exploration (e.g., trying new products), entertainment (e.g., enjoyment), or value (e.g., smart purchase or sense of achievement after purchase). Factors 21–24 were the most frequently categorized as motivation factors, suggesting that the sales promotion stimuli most preferred by consumers may need to generate both high utilitarian benefits (e.g., saving money) and high hedonic benefits (e.g., exploration or value). Unlike the preceding four factors, Factors 25, 26, and 28 were sales promotion stimuli with low hedonic but high utilitarian benefits (e.g., saving money), suggesting that utilitarian benefit promotions are the second most preferred type and exert their influence on consumers’ online impulse buying solely through monetary savings rather than through improved product quality or shopping convenience, as suggested by Chandon et al. (2000). Factors 27 and 29 were sales promotion stimuli that generated high hedonic (e.g., exploration) and low utilitarian benefits, and their effects on consumers’ online impulse buying were weaker than those of other sales promotion stimuli. Although the effects that sales promotion stimuli have on online impulse buying depend on their benefits, they are still categorized as the primary motivation factors of online impulse buying. Thus, we can reasonably infer that stimuli with high hedonic benefits (e.g., particularly good value) or high utilitarian benefits (e.g., saving money) can effectively elicit consumers’ online impulse buying.

At the beginning of the 21st century, Liang and Lai (2002) indicated that the basic functions of online stores were motivational, encouraging consumers to purchase online (e.g., rapid searching, easy registration, shopping carts, home delivery services, a fully electronic purchase process, and multiple payment methods), and were important in satisfying consumers. However, these basic functions have become more associated with hygiene over time. The transition from motivation to hygiene demonstrates that the elementary functions of online stores considered advanced a decade ago have become basic requirements. Consumers are now used to online stores incorporating these basic design factors, which affect their online shopping behavior and define their comfort zone in the online shopping experience. A lack of these basic design factors may intensify consumer caution, hindering the online shopping experience and prompting consumers to switch to another online store.

The top five hygiene factors determined by the results of this study (ease-of-use website interface, member confidentiality and security, use of appropriate fonts on webpages, provision of member centers, and product categorization) are considered the most important. Consumers consider ease-of-use website interfaces and the protection and security of user information to be prerequisites for online stores. A lack of smooth browsing or a failure to protect customer information can lead to consumer dissatisfaction and further damage the image of an online store.

5.2. Theoretical implications

This study provides new insights for both the IS and marketing literature and adds to the knowledge of online impulse buying in four ways. First, we offer a framework incorporating 31 factors associated with online impulse buying and grounded in IS and sales promotion research, providing a deeper understanding of their effect on online impulse buying. To the best of our knowledge, this study is the first to simultaneously examine the influence of website design factors and sales promotion stimuli on online impulse buying using two-factor theory. Classifying the 31 factors into motivation and hygiene categories across each stage of the
EKB model makes their influence on online impulse buying more apparent.

Second, although sales promotion stimuli are of interest in the research related to online impulse buying, only two studies have examined specific stimuli such as price discounts, bonus packs, and volume deals as antecedents in their models (Pettigrew et al. 2015; Xu & Huang, 2014). Unlike these encouraging but partial studies, this study includes nine sales promotion stimuli classified into hedonic or utilitarian categories based on their benefits and ranks their effects on online impulse buying. This ranking identifies the most effective sales promotion stimuli and offers a comprehensive checklist for Web designers, enabling them to organize their sales promotion stimuli and encourage online impulse buying.

Third, our findings indicate that the distribution of motivation and hygiene factors for each stage of the EKB model is uneven, as some stages involve only hygiene factors such as searching for information, choice, and post-sales services. Website designs may fail to provide motivators for these stages, or previous research has simply overlooked the motivators of online impulse buying at these stages due to the absence of comprehensive definitions of the motivation or hygiene factors across all stages of consumers’ decision-making process. Our findings indicate that more investigation into the motivators is required at the stages of information searching, choice, and post-sales services.

Fourth, our findings indicate that website design elements previously considered to be motivators of consumers’ online shopping behavior (Liang & Lai, 2002) are mostly hygiene factors associated with online impulse buying. Such findings echo our claim that the triggers of consumers’ online shopping behavior do not always apply to online impulse buying. They demonstrate that the motivators of online shopping behavior are not applicable to online impulse buying, i.e., the boundary of theoretical application, and furthermore provide a well-structured framework for sales promotion stimuli to become motivators of online impulse buying. This theoretical contribution reflects the essence of Whetten’s (Whetten, 1989, p. 493) argument: “(a study) has theoretical merit only if something about the new setting suggests the theory shouldn’t work under those conditions.” Thus, in the future, researchers can examine why the anomaly exists and examine the ways in which the model can accommodate the new information (Whetten, 1989). We believe that our findings to some degree meet the theoretical contributions requirement raised by Whetten.

5.3. Practical implications

The findings of this study can help online retailers and Web designers to understand the effects that factors associated with online store design and sales promotion stimuli can have on online impulse buying. Of the factors examined, sales promotion stimuli were the most effective in terms of motivation. E-retailers can take five practical implications from this study. First, to trigger the strongest online impulse buying in consumers, online stores can use sales promotion stimuli that integrate utilitarian benefits (e.g., monetary savings) or hedonic benefits (e.g., value). For example, sales promotion stimuli such as buy-one-get-one-free, group buying, limited time offers, or limited quantities can motivate impulse buying. These sales promotion stimuli can instill the cognitive thought that one is saving money and making smart purchasing decisions. Second, as the nature of products or services can present utilitarian rather than hedonic benefits, e-retailers can consider using sales promotion stimuli that present a high utilitarian benefit alone (e.g., free gifts, product discounts, and bonus rewards). These stimuli create the sense that a consumer is saving money and encourage him or her to make impulse purchases. Third, as the nature of products or services can present hedonic rather than utilitarian benefits, e-retailers can use sales promotion with a high hedonic benefit (e.g., trying new things, new product releases) to appeal to consumers who look for enjoyment or enjoy trying new products. Fourth, as our framework is based on the two-factor theory, it can help e-retailers to balance their efforts with the performance expected when the factors are used to induce online impulse buying in consumers. E-retailers can then effectively allocate resources to create profits. Finally, the motivation factors associated with online impulse buying can give online stores a competitive edge. Hygiene factors represent the basic requirements of online store operations, which reflect the rules to which an online store is expected to adhere. As such, these factors cannot be used to distinguish one store from another or generate any competitive advantage. Motivation factors, particularly sales promotion stimuli, are frequently considered as one-off measures by online stores and are therefore frequently overlooked. However, our findings suggest that an online store should integrate motivation factors into their product displays and use different factors with various benefits to elicit or retain the purchase impulse of consumers.

5.4. Limitations and directions for future research

This study has a number of limitations. First, most of the respondents were consumers under 35 years old. However, their age profile was not of great concern, as our investigation focused on the design-related factors that elicit online impulse buying from online consumers. Those with online shopping experience and who understand or experience online impulse buying are expected to be younger than those without this experience, as shopping online is considered riskier than shopping at physical stores and older consumers are more risk averse (Chandon et al., 2000). We argue that the respondents recruited in this study were appropriate, as they were capable of understanding and categorizing factors related to impulse buying based on their online shopping experience. In addition, although our findings represent the primary consumer feedback from respondents below the age of 35, such a consumer base will grow in the future. Thus, the limitations presented by the age profile of the respondents will eventually become advantageous, and our findings should benefit e-retailers in the long run. Second, as Internet services rapidly evolve, the 31 factors associated with online store design and sales promotion stimuli listed in this study may not comprehensively represent all of the factors that induce online impulse buying. Based on the classification foundation of this study, future research could examine more factors to generalize the findings. Third, we used a yes-no model to classify the factors related to online store design and sales promotion stimuli into motivation and hygiene categories, to simplify and shorten our questionnaire, and to increase the participation of the online respondents. However, we could not eliminate the possibility that the respondents might have perceived the importance of each factor differently. Using a 7-point Likert scale would be beneficial in future questionnaires.

There are several potential directions for future research. First, the complementary effects of hygiene and motivation factors on online impulse buying can be further investigated. Soliman (1970) indicated that appropriate hygiene factors provided by the external environment could strengthen motivation factors. It is essential to explore the influence of hygiene factors on the relationship between motivation factors and consumers’ online impulse buying. Second, situational factors such as product attributes, shopping motivation, and personal traits (e.g., professional knowledge) may have moderating effects on the relationship between motivation factors and online impulse buying. For example, when a person possesses an explicit motivation to shop and sufficient professional knowledge, hygiene factors may be enough to induce online impulse buying. However, if one’s motivation to shop and profes-
sional knowledge is lacking and the consumer is simply browsing, he or she may make a purchase due to motivation factors. If the relationships between situational factors, shopping motivation, and personal traits can be ascertained, online store design functions can be directed at different users to encourage online impulse buying.

Third, although this study was conducted in Taiwan, the potential bias due to differences in consumer profiles as compared with other major e-commerce markets is of minor concern. A comparison of three countries, including Taiwan, the U.S., and Germany, assures us that their online consumers’ profiles are similar. The online consumers in these countries are mostly young people in their 20s and 30s. The e-commerce markets in these countries are represented by a high percentage of online consumers. Taiwan currently ranks third in online shopping frequency in the Asia-Pacific region (MasterCard, 2015). In 2015, 70% of online consumers in the U.S. shopped online at least monthly (Mintel’s online shopping US 2015 report, 2015). In Germany, the portion of individuals using the Internet to make online purchases was 70% (Internet Retailer, 2015). However, when looking at the motivation factors associated with online impulse buying in other parts of the world, cultural differences should be considered, especially if the consumers are unusually sophisticated or the online consumers' profiles differ from those characterized in this study. Thus, future studies could validate our research model in other countries to increase the generalizability and reliability of our findings.

Fourth, this study identified the ranking of motivation factors in terms of their utilitarian and hedonic benefits. Future studies could investigate the effects that different age (e.g., Generation X vs. Generation Y) or monthly personal budget have on the relationship between sales promotion stimuli and consumers’ online impulse buying. Moreover, the association between age differences and preferences for the hedonic or utilitarian benefits of sales promotion stimuli may call for further exploration.

Fifth, this study uses the second stream of research based on the two-factor theory to identify the motivation and hygiene factors associated with online impulse buying. However, the first stream of IS research is indispensable to the rigorousness of this study. Thus, future research could develop and test hypotheses based on our findings to lay a solid groundwork for theory and practice.

Finally, in addition to the two-factor theory, other models such as the Kano model, which proposes that the quality of products or services can be divided into five major categories (attractive, one-dimensional, must-be, indifferent, and reverse quality), may provide alternative perspectives for investigations into the relationship between hygiene and motivation factors and online impulse buying.

6. Conclusions

Although online impulse buying is a recent and important topic, little attention has been paid to the factors associated with the online store designs and sales promotion stimuli that are most effective at encouraging consumers’ online impulse buying. Based on the two-factor theory, the findings of this study provide theoretical and practical contributions and help to clarify the factors involved in the consumer decision-making processes. Future research using other theories to investigate the relationship between hygiene and motivation factors and online impulse buying would be beneficial.

References


