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The effects of consumer perception of volume discount benefits on intention to purchase grocery products

Deal proneness as a moderator

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Effects of
consumer
perception of
VD benefits

1017

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Abstract

Purpose – The purpose of this paper is to investigate the effects of consumers' perceptions towards volume discount (VD) benefits on their intention to purchase grocery products under this scheme using deal proneness as a moderator.

Design/methodology/approach – Data were gathered through a survey of 583 Malaysian consumers, and were analysed using the partial least squares technique.

Findings – The results showed that perceived savings, self-expression value, and convenience positively affected consumers' intention to purchase grocery products under VDs. Deal proneness negatively moderated the relationship between perceived quality, innovation, and consumers' intention to purchase under VDs.

Practical implications – The findings of the study will help retailers to understand the effects of consumers' perceptions of VD benefits on their intention to purchase products under VDs, thereby allowing retailers to promote products under VDs more effectively.

Originality/value – Although the VD is a common type of sales promotion, this topic is rarely explored. This study thus contributes to the advancement of knowledge by determining the effects of the potential benefits of VDs on consumers' intention to purchase.

Keywords Malaysia, Perceived quality, Intention to purchase, Deal proneness, Perceived savings, Volume discount

Paper type Research paper

Introduction

Sales promotions (SPs) are highly prioritised in the current market because consumers prefer to have SPs more frequently; and, it has persuading effects on potential consumers, which increase sales volume and profit. As such, marketers assign a higher proportion of their marketing budget to SPs compared to advertising. SPs consist of a wide range of marketing tools that are used by retailers to fulfil short-term objectives (Iranmanesh *et al.*, 2016). Retailers use SPs in different forms, such as price discounts, volume discounts (VDs), free gifts, and sweepstakes, to attract consumers and, simultaneously, increase their business volume. There are certain reasons that the VD was selected at the business-to-customer (B-to-C) level as the focus of this thesis. First, the VD is one of the most common types of SPs at the B-to-C level, specifically in Malaysia (Mullin, 2010; Jayaraman *et al.*, 2013).



Second, despite the abundant research on other types of SPs, such as price discounts (Choi *et al.*, 2014; Álvarez and Casielles, 2008), coupons (Garretson *et al.*, 2002; Wierich and Zielke, 2014), and premiums (d'Astous and Jacob, 2002; Palazon and Delgado-Ballester, 2013), and the in-depth investigation into the crucial dimensions of these types of SP techniques in several contexts, studies on VDs, especially at the B-to-C level, are seldom researched (Gendall *et al.*, 2006; Li *et al.*, 2007). Third, the results of the studies on other types of SP techniques cannot be generalised to VDs since the objectives and nature of the different types of SPs are different. Therefore, the focus of this thesis is on VDs at the B-to-C level to fill up the literature gap.

The previous research on VDs at the B-to-C level can be categorised into three main streams of research. The first stream of research compares the effect of VDs and price discounts on reference price and brand equity. The results of these studies show that price discounts might reduce the reference price of consumers (Lowe *et al.*, 2014), which would lead to undermining the perception of quality (Darke and Chung, 2005) and damaging the brand image and brand equity (Theotokis *et al.*, 2012). VDs assist retailers to gain a competitive edge by not obligating them to reduce the price. From this perspective, the VD is a preferable technique compared to the price discount. In addition to the potential effect of the SP on the reference price and brand equity, the retailers need to know the most effective type of SP technique. To find the preferred method, the second stream compares the effectiveness of VDs with other types of SP techniques (Gilbert and Jackaria, 2002; Guerreiro *et al.*, 2004; Shi *et al.*, 2005; and Gbadamosi, 2009). These researches also provided some explanations on the reasons why consumers prefer one type of SP to another. The third stream of research explores the marketing factors that have an impact on consumers' preferences for VDs over other types of SP techniques, especially price discount (Chen *et al.*, 2012; Xu and Huang, 2014; Carlson *et al.*, 2016).

The previous research on VDs has tried to clarify the effect of VDs on reference price and brand equity, their effectiveness compared to other types of SP techniques, and the factors that have an impact on consumers' preferences for VDs. However, two gaps exist in the literature on VDs and the aim of this study has been to address them. First, although the researchers have tried to explore the factors that may affect the consumers' intention to purchase under VDs, there is a lack of research to explain the psychological reasoning for why consumers have the intention to purchase products under VDs. Hence, this study has adopted the Chandon *et al.*'s (2000) model of consumers' perception of benefits to explain the psychological reasons for consumers' intention to purchase. They categorised the benefits of SPs to consumers into utilitarian benefits (i.e. savings, higher product quality, and improved shopping convenience) and hedonic benefits (i.e. value expression, entertainment, and exploration).

Second, the gap in literature regarding the undeniable influence of individuals' differences on consumers' purchase decisions cannot be ignored. Liao *et al.* (2009) suggested that although the consumers' intention to purchase relies upon their shopping motives, the consumers' characteristics play a prominent role as well. Previous studies have shown that deal proneness can affect the consumer's evaluation of SPs (d'Astous and Landreville, 2003) and purchase behaviour (Lichtenstein *et al.*, 1997). Therefore, the moderating effect of deal proneness on the relationships between the perceived VD benefits and consumers' intention to purchase under this scheme was also investigated. Theoretically, this study enhances the knowledge in the SP field by determining the effects of the potential benefits of VDs on the consumers' intention to purchase. By understanding the aforementioned relationships, retailers and manufacturers can effectively promote their products under this scheme. Furthermore, the inclusion of deal proneness as a moderator will increase the value in identifying the focus group of the VD, which in turn, will benefit retailers and manufacturers.

Literature review

SP

Advertising and SPs are the most important marketing tactics with the highest expenditure compared with other tactics of selling products (Belch and Belch, 2007). Marketers face difficulty in making decisions about assigning the appropriate budget for these two options. Until the 1980s, SPs and advertising had been integral parts of marketing tactics, but the latter has become the preferred marketing tool for attracting consumers and increasing sales. The importance of SPs has considerably grown since the 1980s, and the marketing budget has been reallocated. Therefore, SP is regarded as more important than advertising, and the amount of marketing budget assigned for SPs is larger than ever before. According to Belch and Belch (2007), marketers allocate between 60 and 75 per cent of their promotional budgets to SPs.

The large body of literature on SPs has consisted of five main streams. The first research flow, which is a descriptive type, is concerned with the empirical estimation of the SPs' impacts on market outcomes. Some of these outcomes are categorised as sales, market share, and brand switching (Sun *et al.*, 2003; Nagar, 2009; Abril *et al.*, 2015). It is worth mentioning that, the first category strives to figure out the extent of the promotion significance on sales (Akaichi *et al.*, 2015) and the post-promotion effect on the rate of average repeat purchases (DelVecchio *et al.*, 2006). The second flow of research works seeks to characterise the promotion sensitive consumer in terms of demographics, psychographics, and purchase behaviour (Martinez and Montaner, 2006). The third flow concentrates on the comparison between the effectiveness of the various types of SPs to detect the most desirable type (Banerjee, 2009; Ndubisi and Moi, 2005; Lisa, 2013). In order to clarify the rationale behind consumers' reactions to promotions, the fourth type of research works takes advantage of psychological theories and models (Pacheco and Rahman, 2015). Ultimately, the fifth research stream investigates the environmental factors that motivate consumers to purchase under SPs (Gamliel and Herstein, 2012; Liu and Chiu, 2015).

Chandon *et al.* (2000) classified promotions as monetary and non-monetary promotions. Although the importance of non-monetary promotions in the purchasing decisions of consumers is widely recognised, there is still a lack of research on non-monetary promotions, such as VDs, in all the above-mentioned streams (Jones, 2013). Monetary promotions and non-monetary promotions are different in nature, and their effectiveness varies for different products in various situations (Sinha and Smith, 2000; Gendall *et al.*, 2006). In addition, a monetary promotion has certain limitations compared with non-monetary promotions. For instance, price discounts are costly to retailers and result in detrimental effects in the aspect of reducing the reference prices for consumers (Lowe *et al.*, 2014; Huang, 2016), hence undermining the perception of quality (Darke and Chung, 2005; Pacheco and Rahman, 2015) and damaging the brand image and brand equity (Theotokis *et al.*, 2012). In VDs, as retailers reward consumers to purchase in bulk, consumers think that retailers gain profit in selling more, thus inducing a negative effect on the quality perception and brand image. The advantages of VDs compared to monetary promotions have increased its popularity. Considering the growth of the VD adoption in the market and the lack of studies on VDs, specifically in the Asian markets, it is necessary to do some further research on VDs. In the present study, SPs under VDs are thoroughly investigated in the context of B-to-C to generate more knowledge in the marketing theory.

VD

The VD is one of the most common types of SPs. Under VDs, the seller or manufacturer rewards consumers who purchase in bulk or units by providing a reduced price for each product or group of products. Examples of VDs are 5 per cent (or more) extra; buy one (or more) and get one (BOGO) (or more) free; BOGO up to 70 per cent discount; coupons that

provide extra volume on repurchase; and buy two, get 10 points on a loyalty card. Retailers frequently use VDs to create unplanned purchases (Iranmanesh *et al.*, 2016) as they generate benefits (i.e. value for money) for consumers (Laroche *et al.*, 2003).

Wansink *et al.* (1998) revealed that VDs could increase sales through the purchase of a quantity of products at a level that is higher than normal. In addition, the VD is capable of boosting the consumption rate either in a direct or indirect manner (Wansink, 1996). Regularly shopping at multiple stores and making numerous unplanned discretionary purchases are behaviours of the average consumer (Bell *et al.*, 2011). Most retailers prefer guaranteed sales from a consumer today rather than probabilistic future sales. The capacity of retailers to sell more units reduces the likelihood for a consumer to run out of stock and purchase from other similar competitors. Therefore, the VD allows retailers to take consumers out of the market, ensures repeated consumption in a way that induces habit formation, passes the inventory holding costs on to the consumers (Ailawadi *et al.*, 2007), and accelerates consumption in novel settings or in the place of other product features (Wansink and Ray, 1996).

Previous research has tried to provide the reasons why consumers prefer one type of SP to another. For example, Chen *et al.* (2012) carried out a research by using in-store sales' data. Based on their findings, presenting the consumers with a free bonus pack would result in higher sales in comparison with the price discount for the same amount. They explained the consumers' preferences for VDs by using the "base value neglect" model. The model illustrated the weakness in consumers' ability in processing the numerical values. To explain more, consumers have the tendency to consider the applied percentages as their fundamental approach of judgment rather than considering the base value. As an example, if one product has the cost of \$12.00/pound, the recommended promotion on behalf of the marketer would be about 50 per cent more (24 ounces) or else, there is a possibility of selling the pound at a rate of 33 per cent off (\$8.00). Although, the effective price would be \$0.50/ounce in both situations, consumers will intensely prefer bonus amount simply due to the greater percentages of 50-33 per cent. In another study, Shampanier *et al.* (2007) suggested that emotion plays a fundamental role in influencing consumers' intention to purchase. Due to the positive impact of free goods, they are more favourable as compared to the discounted goods even to the same degree (Chandran and Morwitz, 2006). The additional value of the VD is generally obvious to the consumer and can have a strong impact on the purchase decision (Waani and Tumbuan, 2015). Ahmetoglu *et al.* (2014) have also found that, whilst selecting the benefits, consumers stay away from trade-offs (including discount calculation, which requires a psychological effort). Consumers hold a clear image about free, which is an absolute price. Accordingly, no fear of loss and no calculation are involved in that offer. Therefore, they prefer VDs to other types of price discount. The preference of the VD to the price discount can also be explained by implementing the prospect theory (Kahneman and Tversky, 1979). According to this theory, a reference point is the main criterion that affects consumers' decision-making process, and any deviations from the reference point are considered as gains or losses. Consumers are likely to be loss averse and "losses loom larger than gains" (Kahneman and Tversky, 1979, p. 279). In the field of SPs, any discount in price is possibly viewed as reduced losses; meanwhile, the VD is more probable to be perceived as segregated gains and, as such, the VD is considered more favourable than price discount. Clow and Baack (2014) also suggested that consumers enjoy VDs because of the feeling of getting free merchandise. Based on their study, the apparent added value received from the bonus pack could have a powerful influence on consumers' intention to purchase.

Although the previous studies tried to explain the reasons that consumers prefer VDs to the other types of SPs, the psychological reasons for purchasing products under VDs is not yet clear. As such, this paper seeks to fill up this gap by adopting Chandon *et al.*'s (2000) model of consumers' perceptions of benefits.

Model conceptualisation and hypothesis development

Figure 1 shows the proposed framework for investigating the effects of consumers' perceptions of VD benefits on their intention to purchase products under this scheme. This study also investigates the moderating effect of deal proneness on these relationships.

Perceived savings

The perceived savings refer to spending less and saving money (Mimouni-Chaabane and Volle, 2010). VDs provide perceptions of monetary savings by providing rebates or refunds on future product purchases or by offering free additional products. The pain of paying can be reduced and the perceptions of monetary savings can be derived from both deviation from a reference price and the amount of the price reduction (Blattberg and Neslin, 1990). Sinha and Smith (2000) indicated that compared with mixed promotions (buy two, get 50 per cent off), consumers perceived a significantly higher transaction value from the extra-product promotion (buy one, get one free) because the "Buy two, get 50 per cent off" deal was perceived poorly *vis-à-vis* "Buy one, get one free". The latter evidently conveys a gain; whereas, the former inherently suggests an urge to purchase two units to receive the price reduction. A "buy one, get one free" deal indeed signifies a gain of an additional unit via the use of the term "free" (Seibert, 1997). Monetary savings are assumed by most SP analytical and econometric models to be the main motivation for consumers' availing SPs (Blattberg and Neslin, 1993). Bluschke (2011) stated that perceived savings significantly affect consumers' intention to purchase. Therefore, the following hypothesis has been developed:

- H1. Perceived savings positively affect the consumers' intention to purchase grocery products under VDs.

Perceived quality

Quality is of two broad kinds, namely, objective quality and subjective or perceived quality. Objective quality is the term used for the assessment of actual technical superiority (Hjorth-Andersen, 1984). However, objective quality is not of interest in the present study because the consumer ultimately conducts the quality evaluation not based on objective standards, but using a subjective process instead (Hjorth-Andersen, 1984). Subjective quality or perceived quality indicates the judgment of a consumer on the value of a certain product (Zeithaml, 1988). The effectiveness of SPs for high- and low-equity brands is characterised by mixed empirical evidence. Although some studies found that lower quality brands are less positively affected by price cuts than are higher quality brands (Blattberg and Wisniewski, 1989), others found the opposite (Bronnenberg and Wathieu, 1997). Li *et al.* (2013) and

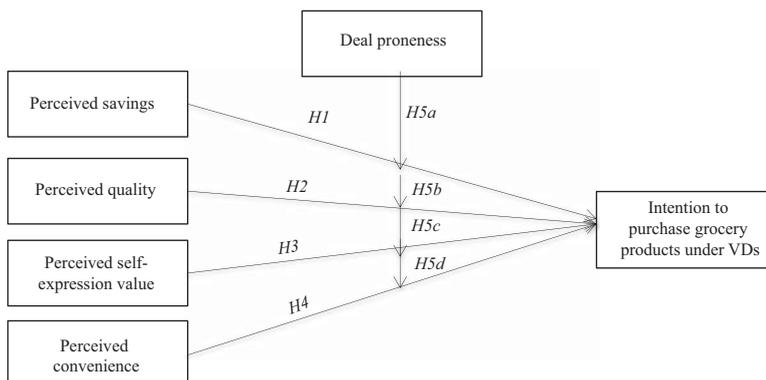


Figure 1.
Proposed research
framework

Bao *et al.* (2011) indicated that perceived quality significantly affects consumers' intention to purchase. As such, the following hypothesis has been developed:

H2. Perceived quality positively affects the consumers' intention to purchase grocery products under VDs.

Perceived self-expression value

Perceived self-expression value refers to consumers' self-perception of being a smart or good dealer if purchasing products under VDs (Buil *et al.*, 2013). Moral or personal values, such as being a "responsible buyer," drive certain consumer responses to SPs (Mittal, 1994). Alternatively, a price deal might mean that they are smart consumers (Schindler, 1998). Consumers value their ability to wait for sales, as well as their capacity to obtain the same product quality at a lower price. Thus, due to their efforts in searching for the best deal, such consumers pay less than do others for the same product, and get more for less (Schindler, 1992). These consumers consider themselves smart and savvy – when they find a good deal; they feel that they were treated fairly by a manufacturer or retailer. Meanwhile, expressing and enhancing their sense of themselves as smart consumers and earning social recognition or affiliation drive other consumers to respond to SPs as well (Bagozzi *et al.*, 1992; Schindler, 1992). Wilcox *et al.* (2009) and Bian and Forsythe (2012) cited the self-expression value as an important driver of consumer intention and choice. As such, the following hypothesis has been developed:

H3. Perceived self-expression value positively affects the consumers' intention to purchase grocery products under VDs.

Perceived convenience

Perceived convenience refers to the perception of convenience due to the reduction in the number of trips to shops, minimising the time of purchase by purchasing more products at one time, and reduction in searches and decision costs. As a phenomenon, convenience has multiple facets (Costa *et al.*, 2001). "Convenience" recalls the minimal effort to accomplish a task. Convenience is related to the time spent on shopping, and comprises three components, namely, time, physical energy, and mental energy (Yale and Venkatesh, 1986). In marketing literature, the construct of convenience encompasses the non-monetary resources of time and effort (Berry *et al.*, 2002). Convenience is important in consumers' purchase decisions (Brown *et al.*, 2003). However, little research attention in the marketing theory has focussed on the concept of convenience (Farquhar and Rowley, 2009). Chandon *et al.* (2000) suggested that convenience is one of the reasons that consumers purchase products under SPs. Bluschke (2011) found that perceived convenience significantly affects consumers' intention to purchase. Consumers prefer to minimise their shopping time and purchase more products at a single spot of purchase. Therefore, VDs may encourage consumers to purchase more products by decreasing the number of their shopping trips and saving their time. Hence, the following hypothesis has been developed:

H4. Perceived convenience positively affects the consumers' intention to purchase grocery products under VDs.

Deal proneness

Deal proneness is defined as a psychological propensity to respond to deals (Lichtenstein *et al.*, 1995). Therefore, deal proneness indicates the psychological propensity to purchase, as opposed to the actual response to goods and services on SPs (DeVecchio, 2005). A consumer who looks for SPs and willingly purchases under VDs may be regarded as a consumer with

deal proneness. Raghuram *et al.* (2004) stated that some consumers enjoy purchasing on deals more than others. Deal proneness positively affects consumer evaluation of SPs (d'Astous and Landreville, 2003; Khare *et al.*, 2014) and purchase behaviours (Lichtenstein *et al.*, 1997). Consumers with deal proneness demonstrate a psychological pattern for positively responding to promotional offers because of the advantages they obtain from purchasing on deals. Therefore, these advantages are expected to translate into better evaluations and a broader selection of the promoted products. As Alford and Biswas (2002) contended, deal proneness may simplify decisions, and consumers with a high level of deal proneness may judge an offer as attractive simply because it is on sale and a discount is heavily offered. Thus, SPs may function as an experiential factor for limiting the information processing of consumers with deal proneness. Hence, the following hypothesis has been developed:

- H5.* Deal proneness negatively moderates the relationships between the consumers' intention to purchase grocery products under VDs and perceived savings, perceived quality, perceived self-expression value, and perceived convenience.

Research methodology

Variables selection

Several steps were taken in the present study to develop and refine the research framework. The first step involved determining the potential benefits of VDs from the review of the literature on SPs and consumer behaviours. Chandon *et al.* (2000) proposed six benefits of SPs that could motivate consumers to respond to SPs. However, previous studies have failed to indicate which of these six benefits are related to VDs. In the second step, a pre-test with consumers was conducted to determine the appropriate variables related to VDs from the Malaysian consumers' point of view. By performing a pre-test amongst 50 Malaysian consumers, this study identified perceived savings, perceived quality, perceived self-expression value, and perceived convenience as the internal evaluation factors that Malaysian consumers consider when they encounter a VD. Third, the initial framework underwent an evaluation process, including interviews with the selected experts (supervisors and managers of hypermarkets), so the final framework could be developed and enhanced from the successfully identified variables and the relationships amongst them, upon completion of the interviews. By matching amongst the literature, pre-tests, and interviews, the variables and the relationships amongst them were refined. The final framework is illustrated in Figure 1.

Measure of constructs

This study employed a survey instrument consisting of four sections: respondents' personal information, perception of VD benefits, intention to purchase, and deal proneness. To ensure content validity, the survey items were derived from previous studies. The perceived savings and perceived quality items were adapted from Grewal *et al.* (1998) and Parguel *et al.* (2007), the scales for the perceived self-expression value were adapted from Raghuram *et al.* (2004) and Parguel *et al.* (2007), the items for perceived convenience were adapted from Chandon *et al.* (2000) and To *et al.* (2007), the items for intention to purchase were adapted from Grewal *et al.* (1998) and Poddar *et al.* (2009), and finally, the scales for deal proneness were adapted from Parguel *et al.* (2007) and Alford and Biswas (2002). Each item was measured on a five-point Likert scale. Table I presents these items.

Data collection and the sample

The sampling frame of this study consisted of all Malaysian consumers who were living in Johor, Penang, Kuala Lumpur, and Sabah; were aged above 14 years; and had purchased products under VDs during the previous year. The sample was limited to those people who

Constructs	Items	Factor loadings	CR	AVE
Perceived savings (PS)	Grocery products under VDs are less expensive	0.788	0.863	0.612
	I can save money by availing VDs	0.809		
	Purchasing grocery products under VDs is a bargain	0.781		
	The price of each grocery item under VDs is less than what I have expected	0.750		
Perceived quality (PQ)	Grocery products under VDs have a high quality	0.907	0.921	0.795
	Grocery products under VDs are very reliable	0.888		
	Grocery products under VDs are superior	0.880		
Perceived self-expression value (PSE)	Purchasing grocery products under VDs seems like an excellent deal	0.848	0.905	0.704
	I feel happy for taking advantage of a VD offer	0.863		
	Purchasing grocery products under VDs is a wise decision	0.804		
	I feel lucky when I purchase grocery products under VDs	0.839		
Perceived convenience (PCO)	VDs speed up my shopping	0.789	0.883	0.654
	VDs facilitate my shopping	0.823		
	VDs reduce my number of trips to the shop	0.829		
	I feel more comfortable in making a single purchase	0.794		
Deal proneness (DP)	I notice the promotion on product X when purchasing this product	0.821	0.894	0.628
	I look at promotion on product X when purchasing this product	0.793		
	I focus on the promotion on product X when purchasing this product	0.748		
	I have favourite brands, but I often purchase those that are on sale	0.787		
	I tend to purchase those brands that are on sale	0.810		
	I am very willing to purchase grocery products under VDs	0.830		
Intention to purchase (INT)	I have a very high tendency to purchase grocery products under VDs	0.857	0.914	0.681
	I intend to purchase grocery products under VDs when they are offered	0.834		
	I expect to purchase grocery products under VDs when they are offered	0.829		
	I will recommend to others those grocery purchase products that are under VDs	0.772		

Table I.
Measurement model evaluation

Notes: CR, composite reliability; AVE, average variance extracted

were aged above 14 years because the legal working age in Malaysia ranges from 15 to 64 years. According to Sidin *et al.* (2004), the selected places were sufficiently representative to cover Malaysia. The data were collected from the hypermarkets in Penang, Johor, Kuala Lumpur, and Sabah. Convenience stores and supermarkets were excluded because of three reasons. First, VDs are commonly practiced in hypermarkets, but are rarely observed in small grocery stores. Second, most of the consumers had experienced purchasing a product under VDs from hypermarkets. Third, consumers typically roam around non-stop in convenience grocery stores and supermarkets, hence limiting the opportunity for the researcher to distribute the questionnaires. By contrast, most hypermarkets have restaurants or coffee shops where consumers can sit and participate in the survey. A hard copy of questionnaire was administered to the respondents for the data collection.

Kaden (2007) stated that a robust sample for most marketing research studies is about 300. Although a 300 sample size is sufficient, the present study aimed at 600 responses to increase the accuracy. As a consequence, a total of 1,000 questionnaires were distributed for the main study, with a total of 723 responses being received. Out of the 723 responses, three

were only partially completed, 120 respondents mentioned that they had no experience in purchasing with VDs and 17 respondents were discarded in data cleaning. This left a total of 583 valid responses, or a 58.3 per cent response rate.

Analysis

This study used the partial least squares (PLS) technique using SmartPLS Version 3.0 to test the research model. This technique was selected owing to the exploratory nature of the study (Hair *et al.*, 2011). A two-step data analysis approach was applied based on the recommendation of Hair *et al.* (2013). The first step analysed the model to be measured; whereas, the second step evaluated the relationships amongst the structures of the underlying constructs (see Fathi *et al.*, 2016; Nikbin *et al.*, 2016; Yusof *et al.*, 2016).

Results

Sample characteristics

The male respondents contributed 42.4 per cent and the female respondents contributed 57.6 per cent. A total of 227 (38.9 per cent) respondents were between 25 and 34 years old, 176 (30.2 per cent) respondents were between 15 and 24 years old, 131 (22.5 per cent) respondents were between 35 and 44 years old, 35 (6.0 per cent) respondents were between 45 and 54 years old, and 49 (8.4 per cent) respondents were 55 years old and above. The respondents' places of residence were well distributed based on the population of the selected city. In terms of the educational attainment of the respondents, 44.5 per cent had a bachelor's degree, 20.0 per cent had a diploma, 14.3 per cent were schooling, 13.1 per cent had a master's degree, and 5.1 per cent had a PhD degree. A total of 41.0 per cent had a household size between five and six, 32.1 per cent had a size of three to four, 18.3 per cent had a size above seven, and 8.6 per cent had a size of one to two.

Measurement model results

The reflective constructs were examined in terms of reliability and validity. The composite reliability (CR) was equivalent to the Cronbach's α and was measured in relation to the internal reliability. Table II shows that the CR of all the constructs was above 0.7, which satisfied the rule in Hair *et al.*'s (2013) study. Hair *et al.* (2010) recommended the acceptance of items with a minimum loading of 0.7. The reliability of individual items was reasonably judged, given that all the scales reported loadings that exceeded 0.7. The average variance extracted (AVE) was used to evaluate the convergent validity; this value exceeded 0.5 in all the constructs. This finding indicated the satisfactory convergent validity of these constructs (Fornell and Larcker, 1981).

Two approaches were used to assess the discriminant validity of the constructs (see Kamal *et al.*, 2016; Zailani *et al.*, 2016; Abdullah *et al.*, 2016). First, the cross loadings of the indicators were examined, in which no indicator loads were higher than any opposing construct (Hair *et al.*, 2012). Second, according to the Fornell and Larcker's (1981) criterion, the square root of AVE for each construct should exceed the intercorrelations of the construct with other model constructs (Table II). Both analyses confirmed the discriminant validity of all the constructs. As shown in Table II, the Malaysian consumers had a high intention to purchase under VDs (mean = 3.808) and they were deal prone (mean = 3.672).

Assessment of the structural model

The measurement model yielded satisfactory results and the structural model was evaluated, subsequently. The predictive accuracy of the model was evaluated based on the explained variance portion (see Nikbin *et al.*, 2015; Zailani *et al.*, 2015). The results suggest that the model was capable of explaining 54.5 per cent of the variance in the intention to purchase under VDs. In addition to estimating the R^2 magnitude, the predictive relevance

evaluation measure developed by Stone (1974) and Geisser (1975) was incorporated as another tool to determine the model fit. The Stone-Geisser Q^2 (cross-validated redundancy) value was calculated to measure the predictive relevance according to a blindfolding process performed in the PLS (see Soltanian *et al.*, 2016; Zainuddin *et al.*, 2017). Chin (2010) indicated that the model displays a predictive relevance if the value of Q^2 is greater than 0. The current research obtained a cross-validated redundancy of 0.368, which was considerably higher than 0. Thus, the model exhibited an acceptable fit and high predictive relevance.

Nonparametric bootstrapping was applied (Wetzels *et al.*, 2009) on 2,000 replications to test the structural model (see Foroughi *et al.*, 2016; Iranmanesh *et al.*, 2017). The significance of the direct effects specified by the research model are evaluated in Table III. All the paths were significant with the exception of *H2*. Therefore, *H1*, *H3*, and *H4* were supported; whereas, *H2* was not supported.

The product indicator approach (mean-centred) was employed to create the interaction construct (Hair *et al.*, 2013). The CR and the AVE of the interaction constructs met reliability and convergent validity criteria. The results indicate that deal proneness negatively moderated only the relationship between perceived quality and intention to purchase ($\beta = -0.064, p < 0.05$). As such, *H5b* was supported; whereas, *H5a*, *H5c*, and *H5d* were not.

Figure 2 illustrates that highly deal-prone consumers have a higher intention to purchase products under VDs compared with low deal-prone consumers. Such difference was weakened by improving the perception of the consumers towards quality.

Discussion

The limited number of studies on VDs at the B-to-C levels and the insufficient knowledge of retailers with regards to the potential drivers of consumers' intention to purchase products

Table II.
Discriminant validity coefficients

	Mean	SD	PS	PQ	PSE	PC	DP	INT
PS	3.915	0.659	<i>0.783</i>					
PQ	3.500	0.759	0.483	<i>0.892</i>				
PSE	3.866	0.635	0.635	0.508	<i>0.839</i>			
PC	3.642	0.699	0.551	0.479	0.587	<i>0.809</i>		
DP	3.672	0.682	0.390	0.277	0.407	0.427	<i>0.792</i>	
INT	3.808	0.678	0.634	0.417	0.635	0.617	0.570	<i>0.825</i>

Notes: Diagonals (in italic) represent square root of the AVE

Table III.
Path coefficient and hypothesis testing

Hypothesis	Relationship	Path coefficient	Decision
<i>Direct effect</i>			
<i>H1</i>	PS → INT	0.301***	Supported
<i>H2</i>	PQ → INT	-0.010	Not supported
<i>H3</i>	PSE → INT	0.277***	Supported
<i>H4</i>	PC → INT	0.294***	Supported
<i>Moderating effect of deal proneness</i>			
-	DP → INT	0.282***	-
<i>H5a</i>	PS × DP → INT	-0.017	Not supported
<i>H5b</i>	PQ × DP → INT	-0.064*	Supported
<i>H5c</i>	PSE × DP → INT	-0.023	Not supported
<i>H5d</i>	PC × DP → INT	-0.009	Not supported

Notes: *t*-values were computed through the bootstrapping procedure with 583 cases and 2,000 samples. * $p < 0.05$; *** $p < 0.001$ (one tail)

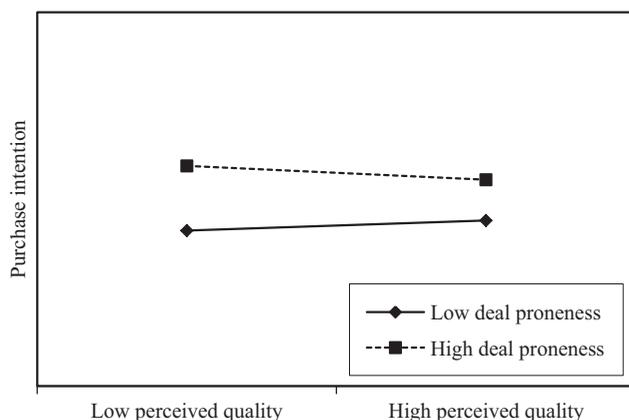


Figure 2.
Interaction effect of
deal proneness and
perceived quality on
purchase intention

under VDs have led to many failures in promoting a product under this scheme. The effects of consumers' perceptions of VD benefits on their intention to purchase grocery products under this scheme have been investigated in the current paper by using deal proneness as a moderator. Perceived savings, self-expression value, and convenience have all been shown to have positive and significant effects on consumers' intention to purchase grocery products under VDs. Furthermore, deal proneness moderates the relationship between perceived quality and consumers' intention to purchase under VDs.

This study highlights the significant effect of perceived savings on consumers' intention to purchase grocery products under VDs. This result is consistent with those reported by many other previous studies, such as Chandon *et al.* (2000) and Raghurir *et al.* (2004). The purchasing of grocery products is mainly driven by rational purchasing motives (Sloot *et al.*, 2005). Therefore, purchasing promoted grocery products under a VD has a low tendency to be postponed by consumers due to the perceived savings. In order to promote grocery products under VDs effectively, retailers must emphasise the savings and value that are associated with purchasing more products at the same price. A certain VD can be framed in various ways. Marketing studies have shown that discount framing affects perceived savings and savings calculation accuracy (Darke and Chung, 2005; Kim and Kramer, 2006). Different stores provide various information on their price labels, and these displayed factors can have various effects on the perception of consumers towards savings. Therefore, retailers must focus on how they advertise their promotions and how they highlight in their price labels the benefits of purchasing products under the VD.

Unexpectedly, we found that the perception of quality does not affect the consumers' intention to purchase grocery products under VDs, which is inconsistent with the findings of previous studies, such as Li *et al.* (2013) and Bao *et al.* (2011). This inconsistency can be attributed to the fact that the current study mostly focused on VDs and the depth of this type of promotion, which is very high. Under this scheme, consumers purchase two products at the price of one. Therefore, these consumers give less importance to the quality of the products and give more value to their savings, making wise decisions, and feeling comfortable with their purchase.

Meanwhile, the perceived self-expression value has been found to have a significant effect on the consumers' intention to purchase grocery products under VDs, which means that the consumers' self-perception of being smart, lucky, or able to find excellent deals by purchasing under VDs can motivate them to purchase products under this scheme. This result is consistent with the findings of Silverstein and Butman (2006) and Schindler (1998). On one hand, Silverstein and Butman (2006) reported that contemporary Mercedes drivers

purchase cars under a SP to feel that they are making a wise decision. Therefore, retailers must promote their products under VDs in such a way that consumers will feel wise and lucky by purchasing these products. On the other hand, Coulter and Roggeveen (2012) found that time or quantity restrictions would lead to a higher self-expression value. Therefore, VDs with time restrictions, such as “three days SP,” and VDs with quantity restrictions, such as “up to three items”, are more effective than those VDs without any restrictions.

As for perceived convenience, the analysis reveals that it significantly affected the consumers’ intention to purchase grocery products under VDs. This result is in line with the results of Jih (2007), who suggested that perceived convenience has significant effects on shopping intention. This result may be attributed to the fact that the majority of the Malaysian consumers are working professionals (Department of Statistics Malaysia, 2014) and have a limited amount of time for shopping. Moreover, the average household size in Malaysia is larger than those in other neighbouring countries (Department of Statistics Malaysia, 2012). Therefore, the chance of being without the grocery product at home is high (Campo *et al.*, 2000). By purchasing grocery products under VDs, they can decrease the frequency of their trips to the shops. Therefore, VDs may encourage these consumers to purchase more grocery products in a single purchase, thereby increasing their convenience and preference to purchase more products. Retailers must promote the proper types of products under VDs to enhance the consumers’ perception of convenience. According to Li *et al.* (2007), consumers perceived higher convenience when given the ability to purchase fast consumable products (e.g. mineral water) under VDs.

Finally, deal proneness negatively moderated the relationship between the perceived quality and consumers’ intention to purchase grocery products under VDs, suggesting that non-deal-prone consumers give higher importance to quality when purchasing products under VDs. According to DelVecchio (2005), the presence of a SP on a product reduces the cognitive effort of highly deal-prone consumers. Therefore, when faced with VDs, such deal-prone consumers pay less attention to the quality of the promoted products and are more sensitive to the amount of savings they would incur.

Implications

This paper contributes to the SP literature by analysing one of the SP techniques, namely, VD, which is increasing in its popularity but has been overlooked in the current literatures. In terms of the theoretical contribution, this study is, to the best of our knowledge, the first to investigate the effects of consumers’ perception of VD benefits on their intention to purchase grocery products. VD research is particularly important because the VD is an excellent SP that has received less attention in the literature. The significant effects of perceived self-expression value and perceived convenience on the consumers’ intention to purchase products under VDs confirm the findings of Chandon *et al.* (2000), who reported that monetary savings is not the only benefit that consumers can obtain from SPs. In addition, the results of this study show that a general model cannot explain consumers’ responses to all types of SPs. In Chandon *et al.*’s (2000) general model, perceived quality is recognised as one of the drivers of consumers’ intention to purchase products under SPs, which has not been supported in the present study. Perceived quality is frequently used by researchers to explain the reason that consumers respond to a SP (Raghubir *et al.*, 2004; Jin and Suh, 2005; Gatti *et al.*, 2012; and Das, 2014). The insignificant effect of perceived quality in the VD context suggests that developing a specific framework for each type of SP is necessary, and that the results of studies on price discount cannot be generalised to VD. In addition, the significant effects of the perceived self-expression value and perceived convenience besides the perceived savings on consumers’ intention to purchase products under VDs confirm Chandon *et al.*’s (2000) findings that monetary savings are not the only benefit of SPs to consumers.

The current research provides practical implications that may help retailers better understand the relative and combined influences of perceived savings, self-expression value, and convenience on consumers' intention to purchase products under VDs, thereby allowing retailers to promote products under VDs more effectively. These retailers can also increase the effectiveness of VDs by matching the significant benefits of this SP with the proper choice of products to promote, the choice of VD intensity, and their communication method. The effect of perceived quality on the intention to purchase is not supported. These findings suggest to retailers that the quality of the promoted product under the VD is not of concern, and they can increase consumers' intention to purchase by enhancing their perception of savings, self-expression value, and convenience. Furthermore, the moderating effect of deal proneness also indicates that perceived quality has a more important role in the intention to purchase of non-deal-prone consumers under VDs than those of deal-prone consumers. Given that Malaysian consumers are highly deal-prone, Malaysian retailers must place higher importance on the other benefits of VDs they can offer to the former. However, retailers in other countries must refer to the results of this study by considering the consumers' preferences for promotional offers.

Limitation and future studies

Although the objective of the study was successfully accomplished, its limitations should be considered before presenting a generalisation of the results. First, the population of the present study was limited to Malaysian consumers who had experienced SPs under VDs during the previous year. Therefore, we must interpret the results as clarifying the stimuli of consumers with recent experiences. Identifying whether the results can be generalised to consumers with no experience during the previous year will require additional research. In addition, in future studies, researchers can test the proposed model of the present study in other countries to determine the drivers of successfully promoting grocery products under VDs and comparing the results with Malaysia. Second, the effects of purchase characteristics on consumers' purchase intention under VDs were investigated for grocery products. Although grocery products are the common type of products promoted under VDs, further studies on other types of products, such as textiles, are required so that the present findings can be generalised. Third, the present study shows that perceived savings, perceived self-expression value, and perceived convenience play important roles in consumers' decisions to purchase grocery products under VDs. The drivers of these benefits should be investigated to explore the most effective way of enhancing these benefits.

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