

Multiple unit price promotions and their effects on quantity purchase intentions

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Abstract

Consumers often encounter multiple unit price promotions whereby a price reduction is presented as a reduced total price for multiple units of the same item (e.g., an item regularly priced at \$1.25 each is promoted as “5 for \$5”). In a series of experiments, we find that the positive effect of these promotions on quantity purchase intentions is contingent on the magnitude of the quantity specified in the offer and the rate of product consumption. However, offer effectiveness is not influenced by highlighting single unit prices, the unrestricted nature of these promotions, or aggregate savings. As predicted by the selective accessibility explanation, the effect of multiple unit price promotions on quantity purchase intentions is shown to be mediated by accessing anchor-consistent knowledge. An agenda for further research and the implications of our findings for retail practice are discussed.

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Popular among retailers of packaged goods, multiple unit price promotions entail a price reduction in which the sale price is presented for multiple units of an item (e.g., “Sale, 3 for \$5, You Save \$1.25 on 3”). Two previous empirical studies of this price promotion strategy (Blattberg and Neslin 1990; Wansink et al. 1998, Study 1) have demonstrated that multiple unit price promotions often result in greater brand sales volume relative to economically equivalent single unit price promotions. While possible explanations for the effectiveness of multiple unit price promotions have been proposed, these mechanisms have not been directly tested nor have boundary conditions for these effects been examined. Accordingly, the objectives of this research are to examine why multiple unit price promotions increase sales and to explore conditions that may influence the effectiveness of this promotional tool.

Evidence regarding the influence of multiple unit price promotions on sales was first provided by Blattberg and Neslin (1990, pp. 350–351) in a field study briefly reported in

their sales promotion book. Their results showed that multiple unit price promotions increased the sales of seven brands to a greater degree than would be expected with single unit promotions. As part of a paper that developed and tested a generalized anchoring and adjustment model regarding purchase quantity decisions, Wansink et al. (1998, Study 1) conducted a field experiment to assess the impact of multiple unit price promotions on the sales volume of thirteen products across a grocery chain’s 86 stores. For nine of the thirteen items, multiple unit price promotions increased sales by a greater percentage than single unit price promotions (which employed the same percentage discounts). On average the single unit price promotions increased sales volume by 125 percent, while the multiple unit price promotions increased sales by (a significantly larger) 165 percent. Taken together, the findings of these two studies indicate that multiple unit price promotions are often effective; a finding supporting grocery retailers’ wide-spread use of this promotional strategy.

To set the stage for our research, we examined grocery retail practices to assess the usage and characteristics of multiple unit price promotions within the industry. This preliminary work included a content analysis of advertising circulars for large market share grocery retailers in the United

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States and follow-up interviews with store managers from participating firms. We contacted the top 21 grocery firms in terms of U.S. market share and obtained the most recent circular ads from 64 operating divisions of twenty firms (one grocer did not respond). Of the 64 divisions (which operate under 40 different chain names), 63 included at least one multiple unit price promotion. For those using this strategy, on average, 27 percent of the products in their circulars were promoted using this tool. At the time this information was collected (2003), the most common approach was to promote two units of the same brand for a single price (e.g., “2 for \$2.50”), although some retailers promoted up to 30 items for a single price. In terms of presenting the offer, 60 percent of the retailers only provided an indication of the number of units and total price (e.g., “3 for \$3”), while the remainder also provided an indication of the savings associated with the offer (e.g., “3 for \$3, save \$1.47 on 3”).

None of the ads indicated whether consumers needed to purchase the stated number of units in the promotion to obtain the discount. As a follow-up, we examined retailers’ policies of allowing consumers to obtain the same discount (as that offered by a multiple unit price promotion) when fewer than the specified number of units are purchased. Store managers representing each of the 63 retail divisions using multiple unit price promotions were contacted. In each instance, the store manager indicated that the percentage discounts reflected in the promotion were also available when purchasing as little as a single unit. Thus, in most (if not all) instances equivalent discounts to those expressed in multiple unit price promotions can be obtained when single units are purchased.

Although the extant research and our own review of grocery practices encourage the use of this promotional form, additional research is needed to examine process mechanisms and to explore boundary conditions. In the first of three studies we assess the viability of an anchoring process, test the effectiveness of these promotions relative to single unit price promotions, and examine whether multiple unit price promotions become less effective when consumers are provided with the single unit price. In Study 2, we focus on three potential boundary conditions. First, we examine whether multiple unit price promotions are equally effective for products that are consumed in lower versus higher quantities. Second, we assess whether multiple unit price promotions become less effective when consumers are explicitly told that they can receive the same discount when purchasing only one unit of the promoted product. Third, we test if these promotions become more attractive to consumers when the offer includes a statement regarding the overall savings associated with purchasing the promoted quantity. In our final study, we test whether (as predicted by the selective accessibility explanation of anchoring) the effects of multiple unit pricing on purchase intentions are mediated by anchor-consistent cognitions. Prior to describing these studies in detail, we highlight the selective accessibility model and introduce the hypotheses related to Study 1.

Explaining the effect of multiple unit price promotions

The previously offered explanation for the effect of multiple unit price promotions on brand sales is based on anchoring effects (Wansink et al. 1998)—a robust finding whereby a numeric estimate is biased towards an arbitrary number that has been encountered prior to formulating the estimate (Jacowitz and Kahneman 1995). Originally, anchoring effects were accounted for via an anchoring and adjustment process whereby people insufficiently adjust from the initial anchor value to the final numeric estimate (Tversky and Kahneman 1974). In this fashion, the units specified in the multiple unit price promotion act as the anchor for consumers who do not fully adjust from this initial value when determining the quantity to be purchased. This view of anchoring was used by Wansink et al. (1998) to account for their multiple unit price promotion field study results.

More recent explanations of anchoring effects focus on the heightened accessibility of anchor-consistent information and the role of this information in arriving at a numeric estimate (e.g., Chapman and Johnson 1999; Jacowitz and Kahneman 1995; Mussweiler and Strack 1999; Strack and Mussweiler 1997). In particular, the selective accessibility model developed by Strack and Mussweiler (1997) holds that anchors result in the selective retrieval of information from memory that is consistent with the anchor, and that anchoring effects are mediated by an increase in the accessibility of this knowledge. From this perspective, a multiple unit price promotion for yogurt indicating “10 for \$5.00” would result in consumers accessing knowledge that is consistent with purchasing a large quantity of yogurt. For instance, the consumer may access knowledge regarding those household members who often eat yogurt and various places/occasions where yogurt could be consumed. Even if the consumer knows that ten units are too many to purchase at one point in time, the accessible knowledge (which is consistent with this higher anchor) will influence the quantity decision in an upward fashion. Under circumstances in which high usage scripts are not available in memory, the selective accessibility model would predict that multiple unit price promotions would not enhance purchase quantities.

While Wansink et al. (1998, Study 1) demonstrated that multiple unit price promotions can lead to higher sales levels than economically equivalent promotions focused on single units, they do not demonstrate that anchoring is responsible for these effects. Indeed, Wansink et al. (1998, p. 74) note that “it is unclear whether individual consumers bought more units than normal or whether more consumers bought their normal quantities of the item instead.” Wansink et al. did conduct additional studies to provide evidence of anchoring effects at the point of purchase, but none of these studies involved multiple unit price promotions. In particular, they showed (in Study 2) that increasing a purchase limit (i.e., “Limit of X per person”) from four to twelve units resulted in a significant increase in quantity purchased per customer. Such a demonstration has not been made within the context of

multiple unit price promotions. Thus, we examine increasing levels of quantities within multiple unit price promotions to test for anchoring within this promotional context.

In conjunction with its multiple unit price promotions, one major grocery chain has begun highlighting the single unit price (e.g., “\$1 each”). Doing so may help prevent consumer criticism about the lack of full disclosure regarding these promotions. Research in psychology on anchoring speaks to the likely effects of including single unit prices with multiple unit price promotions. In general, this research has shown that anchoring effects are robust and persist even when these effects are explained to people and they are encouraged to avoid the influence of anchors. For example, Wilson et al. (1996) tested an assortment of warnings about how an anchor value can influence answers to subsequent questions. Under conditions in which participants were made aware of anchoring effects, provided associated examples, and instructed not to allow such effects to influence their responses, the magnitude of the judgmental anchoring did not diminish. The robustness of anchoring effects has been further demonstrated by research showing that the effects occur when anchor values are clearly uninformative (e.g., Tversky and Kahneman 1974) or unrealistically extreme (e.g., Chapman and Johnson 1994), and irrespective of motivation (e.g., Wilson et al. 1996) or level of expertise (e.g., Northcraft and Neale 1987). Based on this research, we expect that anchoring effects associated with multiple unit price promotions will be unaffected by integrating the single unit price of the item (as examined in Study 1) or by providing more specific information about the unrestricted nature of these promotions (as assessed in Study 2).

Based on the preceding review of the literature, we offer:

H1. Increasing the quantity specified in multiple unit price promotions has a positive effect on quantity purchase intentions.

Previous research (Blattberg and Neslin 1990; Wansink et al. 1998) has compared the relative effectiveness of single versus multiple unit price promotions at the aggregate sales volume level. In contrast, we examine the impact of multiple unit price promotions relative to economically equivalent single unit price promotions on *individual consumers'* purchase decisions and hypothesize:

H2. Multiple unit price promotions will result in higher quantity purchase intentions than corresponding single unit price promotions.

Pilot study

Prior to performing our large-scale experiments (which involve student participants), we conducted a pilot study with adult, non-student participants. Our goal was to establish the anchoring effect of multiple unit price promotions (i.e.,

H1) in a broader, non-student population. A total of 62 adult consumers were randomly assigned to one of two multiple unit price promotion conditions (number of units in promotion: 3, 5). Participants were exposed to an illustration of ten packages of tuna on a shelf with the shelf tag showing the non-sale price. A promotional tag below the regular price contained the experimental manipulation. In the 3-unit promotion ($n = 35$) condition, the promotional tag stated: “Bonus Buy – 3 for \$2.00 – Save \$.97 on 3.” Whereas the 5-unit promotion ($n = 27$) tag stated: “Bonus Buy – 5 for \$3.35 – Save \$1.60 on 5.” The quantity purchase intention measure appeared below the stimuli and asked: “If you encountered the offer shown above, how many cans would you purchase?” We also included a measure that asked participants (using a yes or no response scale) whether they believed they would have to purchase the quantity specified in the offer in order to receive a discounted price.

Multiple unit price promotion condition had a significant effect on purchase intentions ($F_{1,61} = 7.46, p < .01$), such that participants in the 3-unit condition indicated a lower quantity purchase intention ($M = 2.63$) than those in the 5-unit condition ($M = 4.07$). While a sizeable portion of the sample (43 percent) indicated an incorrect belief that one must purchase the quantity specified to receive the discount, the effect of the multiple unit price promotion condition on quantity purchase intentions persisted ($p < .05$) when participants who were “confused” about the offer were excluded from the analysis. Further analysis showed that the quantity specified in the promotion and whether or not consumers were confused about purchase requirements did not have an interactive effect of quantity purchase intentions ($p > .5$). The results of this pilot study provide support for H1 and the proposed anchoring process. Next, in Study 1, we test the hypotheses presented above.

Study 1

Method

Sample

Undergraduate business students ($N = 309$) participated in the study. The sample was 43 percent female and had an average age of 22 years. On average, participants reported purchasing 53 percent of household groceries, and indicated 3.5 years of shopping experience at the store where they currently do most of their grocery shopping.

Design and stimuli

Participants were randomly assigned to the conditions of a 3 (number of units in promotion: 2, 4, 8) $\times$ 2 (single unit price information: present, absent) $\times$ 10 (product: Santitas, Powerbar, Totino's, Arizona, Bumble Bee, Coca Cola, Pringles, Puff's, Tree Top, Chef Boyardee) mixed-factorial design, plus control. Number of units and single unit price information were between-participants factors, while product was a

within-participants factor. The multiple unit price promotion conditions presented the featured products as “2 for \$2,” “4 for \$4,” and “8 for \$8.” For each of these levels, the price of a single product (“\$1 each”) was either present or absent. In the control condition, the single unit price (“\$1 each”) was provided. Across all conditions, savings associated with each of the ten promotional offers was included.

Experimental stimuli (see Fig. 1) included an advertising circular for an unidentified retailer featuring ten products. At the time of the study, each product was being promoted (in a market different from where the study was conducted) as “8 for \$8” by a major U.S. grocery chain. As such, the promotional price level of \$1 each for these products was realistic. The product labels, pictures, and the \$1 per unit price were held constant across conditions; the only variations related to the previously detailed experimental treatments.

Procedures and measures

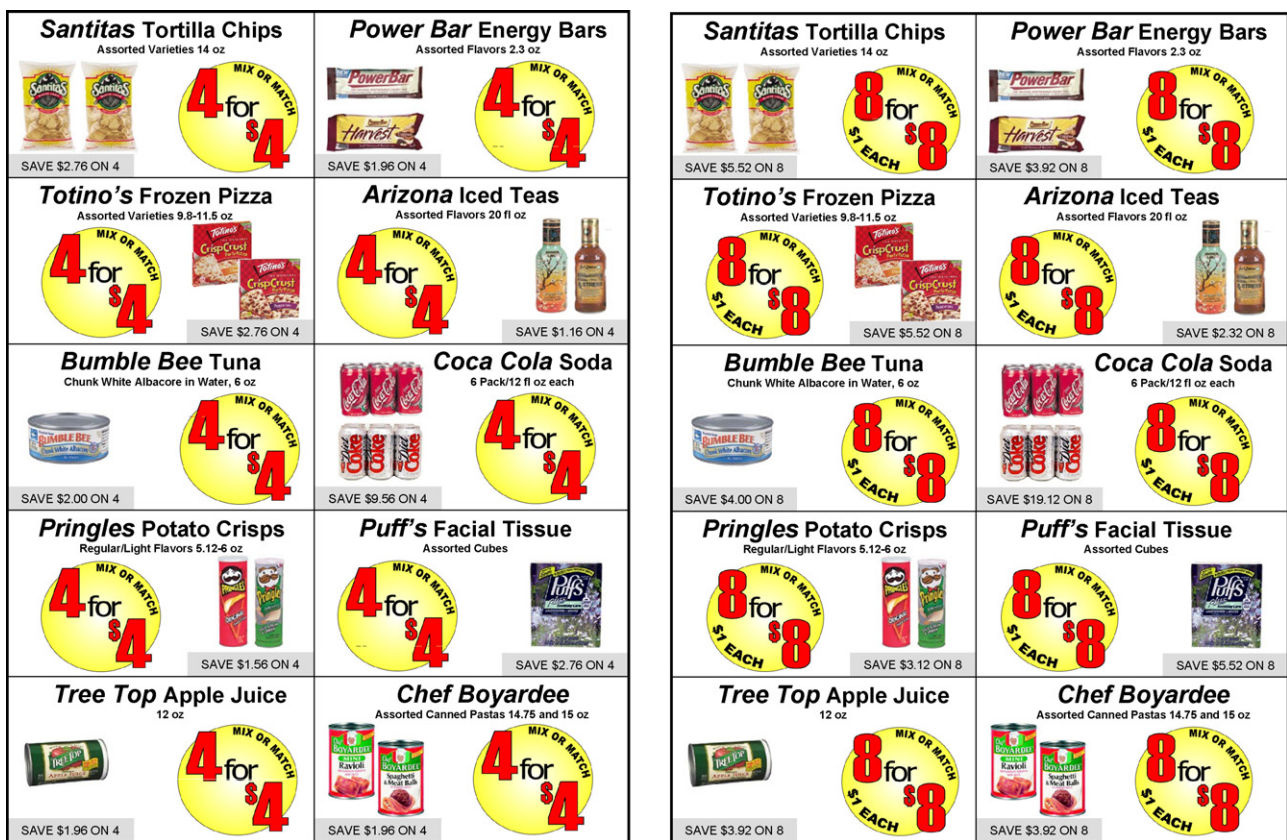
Participants were asked to assume that they were completing a major grocery shopping trip during which they confronted the promoted items. Participants indicated the quantity they would purchase for each item. Subsequently, quantity requirement beliefs were measured by participants indicating either a “yes” or “no” as to whether they believed they would need to purchase the quantity

specified in the promotion in order to receive a reduced price.

Results

Responses to the quantity purchase intention measures were submitted to a 2 (single unit price information: present, absent) $\times$ 3 (number of units in promotion: 2, 4, 8) $\times$ 10 (product: Santitas, Powerbar, Totino's, Arizona, Bumble Bee, Coca Cola, Pringles, Puff's, Tree Top, Chef Boyardee) repeated-measures MANOVA in which product served as a within-participants factor. Product had a significant main effect ($F_{9,258} = 15.94, p < .001$) on quantity purchase intentions indicating that some products generated higher levels of purchases relative to others; the product factor did not interact with the between-participants factors (all $ps > .1$).

The units expressed in the multiple unit price promotion had a significant effect ($F_{2,258} = 13.00, p < .001$) on quantity purchase intentions. For the 2-, 4-, and 8-unit conditions, the average quantity purchase intentions (on a per item basis) were 1.46, 1.90, and 2.42, respectively. Paired contrasts revealed that these means significantly differed from one another (all $ps < .05$). Thus, H1 was supported. The presence (versus absence) of the single unit price information did not have a significant main nor interactive effect (all $ps > .3$).



4-unit/Single unit price absent

8-unit/Single unit price present

Fig. 1. Examples of Stimuli – Study 1.

Quantity purchase intentions for the (single unit price promotion) control condition ($M = 1.64$) were equivalent to the 2- and 4-unit conditions ($ps > .2$) and lower than the 8-unit condition ($p < .001$). Accordingly, these results are only partially consistent with H2.

An examination of the quantity requirement belief measure indicates that a portion of the sample was confused about the nature of the multiple unit price promotion. Overall, 29.2 percent of participants incorrectly believed that they would need to purchase the quantity specified to receive the reduced price. We replicated the preceding analyses after excluding individuals who held these incorrect beliefs and found essentially identical results.²

Discussion

Study 1 results are consistent with the pilot study and provide support for an anchoring-based explanation. In particular, increases in the quantity specified within the multiple unit price promotion boosted overall purchases of promoted items with this effect remaining after removing participants who were confused about the promotional offer. Our findings stand in contrast with past research demonstrating that multiple unit price promotions generate greater sales than single unit price promotions (Blattberg and Neslin 1990; Wansink et al. 1998). In the current study, only the “8 for \$8” condition generated quantity purchase intentions beyond the single unit control condition. These findings indicate that low quantity multiple unit price promotions (i.e., “2 for \$2” or “4 for \$4”) were no more effective than the single unit control condition. For the products used in the current study, the low anchors may have failed to activate high usage knowledge scripts in memory; we further explore this issue in Study 2.

Although highlighting single unit prices had no main or interactive effects on quantity purchase intentions, retailers may benefit by including the single unit price since it likely clarifies purchase requirements. Study 1 results support this contention. In particular, 35.6 percent of participants in the single unit price absent conditions believed that they would need to purchase the quantity specified to receive the reduced price. In the conditions in which the single unit price was present, this percentage was significantly reduced to 22.5 percent ($\chi^2 = 5.46, p < .05$). Lessening confusion about multiple unit price promotions may improve customer relations. One

might also suggest that conveying the single unit price could reduce the number of consumers who forego purchasing the promoted product. However, additional analyses revealed that the frequency in which participants indicated purchase quantities of zero for the promoted items did not differ across experimental treatments.

While integrating the single unit price into a multiple unit price promotion had no effect on quantity purchase intentions, the manipulation (i.e., a statement of “\$1 each” within the promotional offer) could be strengthened. It remains possible that more aggressive attempts to inform and remind consumers about the unrestricted nature of multiple unit price promotions may influence their effectiveness. We will address this question and explore boundary conditions in Study 2.

Study 2

Grocery retailers promote many of their products using multiple unit price promotions including fruit, vegetables, meats, canned goods, dairy products, bakery items, frozen foods, and most any other item offered in a typical store. Even products that are usually purchased in small quantities, such as cartons of eggs, bags of onions, packages of throat lozenges, and cheese have recently been promoted by major grocery chains using “10 for \$10” promotions. Such widespread use of this promotional form suggests that it may be effective regardless of the product.

The selective accessibility model, however, suggests that product characteristics will influence the effectiveness of multiple unit price promotions. Recall that quantity anchors are expected to activate anchor-consistent knowledge (Mussweiler and Strack 2001). In the context of multiple unit price promotions, activated knowledge involves the usage of the product offered with this type of promotion (e.g., how much of the promoted product is typically consumed between shopping trips, the number of people in the household who consume the product, the ability to carry inventory at home). Information activated by the promotional anchor will vary between product categories based on the typical usage of that item. For products that are quickly and regularly consumed or used in a wide variety of situations (i.e., “higher consumption products”), consumers will have existing knowledge of how relatively large quantities of the product can be stored and used. In these instances, multiple unit price promotions are likely to activate usage scripts consistent with storing and using large quantities of the product. And, so long as the anchor is larger than the amount typically purchased, multiple unit price promotions are expected to stimulate the purchase of relatively large product quantities. For products that are consumed more slowly (i.e., “lower consumption products”), knowledge or usage scripts consistent with the units expressed in multiple unit price promotions are most likely unavailable in memory. In the absence of such knowledge activation, the selective accessibility model (Strack

² After excluding participants holding an incorrect belief regarding purchase requirements, the main effect of product on quantity purchase intentions remained ($F_{9,173} = 10.91, p < .001$), and this factor did not interact with the between-participants factors (all $ps > .1$). With this restricted sample, we also found that: (a) units expressed in the multiple unit price promotion had a significant effect ($F_{2,181} = 6.02, p = .003$) on quantity purchase intentions; (b) average quantity purchase intentions for the 2-unit ($M = 1.49$), 4-unit ($M = 1.92$), and 8-unit ($M = 2.24$) conditions significantly differed from one another (with one-tailed tests, all $ps < .05$); and (c) quantity purchase intentions for the control condition ($M = 1.64$) were equivalent to the 2- and 4-unit conditions ($ps > .2$) and lower than the 8-unit condition ($p < .01$).

and Mussweiler 1997) indicates that anchoring effects are unlikely. Accordingly, we hypothesize:

H3. Quantity specified in the promotion and product consumption characteristics will interact to influence quantity purchase intentions, such that the quantity specified will have a positive effect on intentions only among higher consumption products.

In addition to specifying a quantity and overall price (e.g., “5 for \$7.50”), multiple unit price promotions often (but not always) present the overall savings associated with purchasing the specified quantity (e.g., “Save \$2.50 on 5”). Presenting these savings may heighten the effectiveness of multiple unit price promotions by impacting perceptions about the offer’s attractiveness which (in turn) influence quantity decisions. Prior research has demonstrated that alternative formats of presenting (economically equivalent) price promotions often differentially impact deal evaluations and purchase intentions (e.g., Darke and Chung 2005; Hardesty and Bearden 2003; Krishna et al. 2002). Similarly, the inclusion of overall savings may provide a more attractive frame for multiple unit price promotions than if those savings were not included. Consider a promotion with a 40¢ discount per unit (e.g., regular price \$1.40, sale price \$1.00). In a single unit price promotion, savings would be conveyed as “Save 40¢,” a 2-unit price promotion would note “Save 80¢ on 2,” and a 5-unit price promotion would state “Save \$2.00 on 5.” As the quantity specified in the offer increases, we expect that savings will be perceived as larger (and the offer as more attractive) as consumers fail to convert aggregate savings to a per unit basis. We hypothesize:

H4. The positive effect of the quantity specified in multiple unit price promotions on quantity purchase intentions is stronger when overall savings are presented within the offer than when such savings are not included.

Method

Relative to Study 1, the current study more closely approximated an in-store shopping experience. Participants completed a computer-based shopping task that involved serial exposure to 28 products presented along with price information. The participants noted the quantity desired following exposure to each product. Similar to what one would experience in a grocery store, only a portion of the products were promoted. In the current study, we also explore the potential effects of specifying an extreme quantity anchor (i.e., 20 units).

Sample

Undergraduate business students ($N=201$) participated in the study; half of the participants were female and the average age of participants was 22 years. On average, participants had shopped at the store where they currently do most of

their shopping for 5 years and they reported purchasing 53 percent of their households’ groceries.

Design and stimuli

Participants were randomly assigned to the conditions of a 3 (number of units in promotion: 2, 8, 20) $\times$ 2 (unrestricted quantity information: present, absent) $\times$ 2 (offer savings: present, absent) $\times$ 2 (product consumption: lower consumption products, higher consumption products) mixed-factorial design, plus control. The first three factors were manipulated between-participants, with product categories being the only within-participants factor.

Participants were sequentially exposed to 28 products from various categories, of which eight items were presented in the context of a promotional offer. Half of the promoted items represented products consumed in larger quantities over time (i.e., higher consumption products), while the other half represented products consumed in smaller quantities over time (i.e., lower consumption products). To determine these two sets of products, we conducted a pretest using the same population from which Study 2’s participants were drawn. The pretest involved a computer-based task in which participants ($N=33$) were exposed to 30 products and indicated their typical consumption volume. Based upon the pretest, four lower consumption products (Heinz Ketchup, Wheat Thins, eggs, and Dial Liquid Hand Soap) and four higher consumption products (Kraft Macaroni and Cheese, Gatorade, Totino’s Pizza, and Charmin Toilet Paper) were selected. In forming the two sets of products, we were careful to insure that the two were close to equivalent in terms of product prices and associated discounts.

The eight featured products were randomly ordered among the twenty non-promoted items; the order of presentation was held constant. The between-participants multiple unit price promotion manipulation involved presenting the promoted products as either “2 for \$–,” “8 for \$–,” or “20 for \$–.” The study also included a control condition in which the eight promoted items were presented with a single unit discounted price. The promotional prices were realistic since all of the featured products had recently been promoted by a national grocery chain using the same price levels. Examples of the experimental manipulations are shown in Fig. 2. To create the offer savings manipulation, the featured items were presented with or without the savings associated with the offer. For example, within the 2-unit multiple unit price promotion condition, the Heinz Ketchup promotional offer was either presented as simply “2 for \$2” (i.e., savings absent) or “2 for \$2, Save 90¢ on 2” (i.e., savings present).

The manipulation of unrestricted quantity information included two components. First, participants began the study by answering a series of four true or false questions presented as a test of knowledge about grocery retailing. Regardless of their answers, following each response, participants were provided an explanation of the correct answer. As part of our manipulation, the third true or false question asked either about multiple unit price promotion quantity requirements



Fig. 2. Examples of Stimuli – Study 2.

(for the unrestricted quantity information present condition) or slotting allowances (within the unrestricted quantity information absent condition). For the multiple unit price promotion true or false question, we included a visual of a “5 for \$5” promotional offer for Welch’s frozen concentrated grape juice (with a regular price of \$2.00) and stated “Using shelf labels, grocery stores often offer special deals, such as this one. If a consumer buys only 1, 2, 3 or 4 packages of the grape juice, she or he will not receive a price discount (i.e., the consumer will have to pay \$2 per package).” After answering the question, participants were shown the correct answer of “False” and the answer was explained by stating: “With these types of deals, grocery stores always provide the discount regardless of the quantity purchased. So, in this case, the consumer would pay \$1 per package regardless of

the number of packages she or he decided to buy.” The second part of the manipulation for the information present condition included a reminder (during the shopping task) about the unrestricted nature of multiple unit price promotions. In large print next to the first multiple unit price promotion encountered, we stated: “Remember, with this type of offer, you do not have to buy 8 bottles of ketchup to receive the discounted price of \$1 each. If you bought only one bottle, you would pay \$1 (and not the regular price of \$1.45).” The quantity referenced in the note corresponded with the multiple unit price promotion condition.

Procedures and measures

Participants began by completing the true or false questions regarding grocery retailing. Next, they were provided with instructions for the shopping task and asked to assume that they were completing a major grocery trip involving items pictured on the computer. They were then asked to “Please examine each product and its price information and then indicate in the space provided how many of each item you would purchase. Enter a zero for those products that you would not purchase.” The dependent measures for Study 2 were the average quantity purchase intentions for the lower (and higher) consumption products. Quantity requirement beliefs were then assessed using a measure similar to that used in Study 1.

Results

Responses to the quantity purchase intention measures were submitted to a 2 (unrestricted quantity information: present, absent) $\times$ 2 (offer savings: present, absent) $\times$ 3 (number of units in promotion: 2, 8, 20) $\times$ 2 (product consumption: lower, higher) repeated-measures MANOVA in which product consumption served as a within-participants factor. As would be expected, product consumption had a significant main effect ($F_{1,138} = 127.90, p < .001$) on quantity purchase intentions such that the higher consumption products generated greater levels of purchases relative to the lower consumption products. Unrestricted quantity information (i.e., the presence versus absence of information that multiple unit price promotions are not restricted by the quantity purchased) had no main ($p > .6$) or interactive effects ($ps > .2$) on quantity purchase intentions. Reflective of the strength and impact of the manipulation, however, the percentage of respondents possessing an inaccurate belief that the specified quantity must be purchased to receive the discount was reduced from 35.1 percent in the information absent condition to 11.2 percent in the information present condition ($\chi^2 = 16.44, p < .001$). Although the main effect of number of units in the promotion was not significant ($p > .1$), the interaction between product consumption and number of units in the promotion was significant ($F_{2,138} = 7.23, p = .001$).

Follow-up analyses indicated that number of units in the promotion had no effect on quantity purchase intentions for the lower consumption products ($p = .87$), but did have a

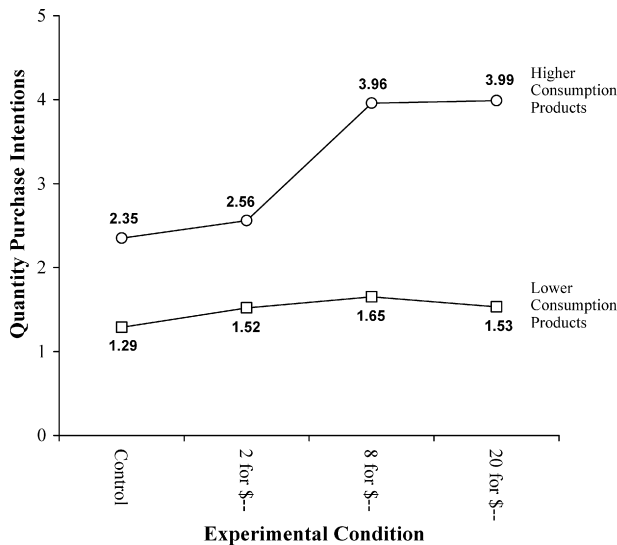


Fig. 3. Product by Multiple Unit Price Promotion Interaction – Study 2.

significant positive effect on higher consumption products ($F_{2,147} = 4.81$, $p = .01$). Therefore, H3 is supported. Contrast analysis of the higher consumption products showed that the 8- and 20-unit conditions produced significantly higher quantity purchase intentions ($M_s = 3.96$ and 3.99 , respectively) than the 2-unit condition ($M = 2.56$; $p_s \leq .01$). The 8- and 20-unit conditions were not significantly different ($p = .95$). Further assessment of the higher consumption products found that those participants in the (single unit price promotion) control condition reported quantity purchase intentions ($M = 2.35$) that were less than the 8- and 20-unit conditions ($p_s < .01$) but not different than the 2-unit condition ($p = .67$). The overall pattern of results across the lower and higher consumption products is depicted in Fig. 3. Offer savings did not have a main ($p > .9$) or interactive effect ($p_s > .2$) on quantity purchase intentions. Accordingly, H4 is not supported.

An examination of the results associated with the quantity requirement belief measure indicates that a portion of the sample was confused about the nature of the multiple unit price promotion. Overall, 22.4 percent of participants incorrectly believed that they would need to purchase the quantity specified to receive the reduced price. We repeated the preceding analyses after excluding those who held these incorrect beliefs and replicated the results described above.³

³ After excluding participants with incorrect beliefs, the interaction between product consumption and number of units in the promotion remained significant ($F_{2,106} = 5.56$, $p = .005$). The effect of units in the promotion did not manifest for lower consumption products ($p = .66$), but did with the higher consumption products ($F_{2,115} = 4.32$, $p = .01$). Follow-up contrasts showed that the 8- and 20-unit conditions produced higher purchase intentions than the 2-unit and control conditions ($p_s < .05$). The 8- and 20-unit conditions did not differ ($p = .48$), nor did the control and 2-unit conditions ($p = .58$).

Discussion

The simulated shopping task used in Study 2 provided a close approximation of an actual grocery shopping experience in which a variety of promoted products are encountered among a majority of non-promoted items. Our findings indicated that the effect of multiple unit price promotion quantity anchors on purchase intentions is moderated by the consumption volume associated with the product. For higher consumption items, the quantity specified in the multiple unit price promotions had a positive effect on quantity purchase intentions; however, the quantity anchor had no effect for lower consumption products. This study also replicated Study 1 findings by showing that multiple unit price promotions with lower specified quantities (i.e., “2 for \$2”) were ineffective in increasing quantity purchase intentions for any type of product. For the higher consumption items, only the 8- and 20-anchor conditions were shown to increase quantity purchase intentions in comparison to a single unit control condition. Providing detailed information that consumers need not purchase multiple units of an item to receive the discount did not undermine the effectiveness of this promotional form. This information did, however, reduce the percentage of participants holding incorrect beliefs regarding purchase requirements. As in Study 1, the incidence of indicating quantity purchase intentions of zero for the promoted items was not influenced by unrestricted quantity information or any other experimental variable. Also, the effectiveness of the multiple unit price promotions was uninfluenced by whether or not the savings associated with the offer were presented. This finding may indicate that the price discount and multiple unit promotional anchor are processed more thoroughly than the savings conveyed within the offer. It is also feasible that the savings information is frequently discounted (as irrelevant) since it represents the savings associated with purchasing the total number of units specified within the offer.

The current study provides considerable support for the selective accessibility model of anchoring as an explanation for the effects of multiple unit price promotions. As noted previously, this theoretical view of anchoring effects holds that knowledge consistent with the quantity anchor is activated upon exposure to the anchor, which in turn biases quantity purchase intentions in the direction of the anchor. For lower consumption products, knowledge consistent with purchasing large quantities is not available, and for this reason multiple unit price promotions were found to be ineffective. For higher consumption items, we showed that 8- and 20-unit price promotions were equally effective in stimulating purchase intentions. The 8- and 20-unit anchors clearly exceeded normal purchase quantities, and as such, are believed to have been equally effective in triggering high usage knowledge scripts. If, as an alternate to the selective accessibility explanation, our findings were due to the promotion anchor acting as a numerical prime (see Wong and Kwong 2000), the 20-unit promotion would have increased purchases to a greater degree than the 8-unit promotion.

Study 3

Although Study 2 findings are consistent with the selective accessibility explanation, we have yet to provide direct evidence that multiple unit price promotions cause consumers to access anchor-consistent knowledge and that such processes mediate the positive effect of these promotions on purchase quantity decisions. Accessing knowledge that is consistent with, for example, an 8-unit promotional anchor entails the consumer thinking about how he or she could store the product, friends and family members' usage of the product, and how and where large quantities of the product could be used. According to the selective accessibility model, such thoughts are more likely to occur when the price promotion suggests purchasing a high quantity of an item (i.e., "8 for \$8") than a small quantity (i.e., "\$1 each"). Moreover, such anchor-consistent thoughts about usage frequency and usage contexts are expected to mediate the effects of multiple unit price promotions on quantity purchase intentions. Formally stated:

H5. The positive effect of multiple unit price promotions on quantity purchase intentions is mediated by cognitions regarding usage frequency and usage contexts.

Method

Undergraduate business students ($N = 125$) were randomly assigned to one of two price promotion conditions ("1 for \$1" vs. "8 for \$8") for a higher consumption item (Gatorade). First, participants viewed the offer (presented in a format similar to Study 2) and indicated a quantity purchase intention. Participants then responded to five items regarding the thoughts they had while viewing the offer and deciding on a purchase quantity. The items asked participants to indicate whether they had thought about: (1) how often they use the product; (2) places where they use the product; (3) relatives, roommates, or friends' usage of the product; (4) storage of the product; and (5) using large quantities of the product. These items were designed to identify the extent to which participants' cognitions focused on product use and usage contexts. As previously noted, such thoughts are expected to be stimulated by multiple unit price promotions with high quantity anchors. The five items were dichotomously scored (0 = "I did not think about this" or "I am not sure if I thought about this," 1 = "I definitely thought about this") and summed to form an "index of use and context cognitions."

Results

To test for the mediation proposed in H5, we completed the series of regression models prescribed by Baron and Kenny (1986). Consistent with our preceding experiments, the first regression model ($F = 6.56$, $p = .01$, $r^2 = .05$) indicated that promotion format (1-unit vs. 8-unit) had a positive effect on quantity purchase intentions ($\beta = .23$, $t = 2.56$, $p = .01$;

$M_{1\text{-unit}} = 3.26$, $M_{8\text{-unit}} = 5.20$). The second regression model ($F = 14.00$, $p < .001$, $r^2 = .10$) revealed the anticipated positive association between promotion format (1-unit vs. 8-unit) and the index of use and context cognitions ($\beta = .32$, $t = 3.74$, $p < .001$). Thus, relative to the single unit condition, the 8-unit condition generated more thoughts about frequency of product use and usage contexts. In the final regression model, quantity purchase intentions were regressed on both promotion format and the index to assess whether the mediator has a significant effect on quantity purchase intentions while controlling for promotional format effect. This model ($F = 6.05$, $p < .01$, $r^2 = .08$) showed that the index of use and context cognitions had a significant effect on quantity purchase intentions ($\beta = .21$, $t = 2.30$, $p < .05$), but the effect of promotional format was reduced to a marginal level ($\beta = .16$, $t = 1.73$, $p = .09$). Thus, H5 is supported.

Discussion

Study 3 replicated the basic effect of multiple unit price promotions on quantity purchase intentions and provides evidence that cognitions associated with product use and usage contexts mediate this effect. These findings suggest that the high quantity anchors specified in multiple unit price promotions can generate use/usage cognitions, which in turn influence consumers' decisions on purchase quantities. In other words, these promotions are effective, in part, due to their ability to stimulate people to think about possibilities for using a significant amount of the product. Even if consumers reject such thoughts, the mere activation of this knowledge is likely to bias anchor-related decisions (Mussweiler and Strack 1999).

General discussion

The present series of studies indicate that multiple unit price promotions provide a means for increasing purchase quantities of promoted products. In particular, retailers can specify a relatively high purchase quantity in these promotions and benefit via increased per consumer expenditures on promoted items. In Study 1, the "8 for \$8" promotion led to higher purchase intentions than the "4 for \$4," "2 for \$2," and single unit promotions. These results were replicated in Study 2 among high consumption products, such that the 8- and 20-unit promotions resulted in higher quantity purchase intentions than the 2-unit and control conditions. Taken together, these findings indicate that the quantity specified within multiple unit price promotions warrants retailers' careful consideration. Further, the pattern of findings suggests that retailers should err on the side of employing relatively high quantity anchors within these promotions. In contrast to prior research, our studies provide no evidence of lower quantity anchors increasing purchase quantities beyond what was stimulated by a single unit price promotion with an equivalent percentage discount.

Study 2 provides evidence that multiple unit price promotions with relatively high anchors are not universally effective in increasing purchase quantities. In particular, these promotions increased quantity purchase intentions for higher consumption products and had no impact on purchase intentions for lower consumption products. Accordingly, retailers should consider product consumption volumes in anticipating the effectiveness of this promotional form. Our observations of current grocery retailing practices revealed somewhat indiscriminant use of multiple unit price promotions. It may not be in retailers' best interests, however, to overuse multiple unit price promotions when single unit promotions are equally effective. Exploring the potential overuse of this and other price promotion formats represents a promising avenue for further research.

We find (in Study 2) that 20-unit anchors are as effective as 8-unit anchors in terms of their impact on quantity purchase intentions. Thus, higher quantity anchors (i.e., > 10) may be useful in promoting items, especially those that consumers are likely to stock up on when found on sale. However, high quantity anchors may generate negative deal perceptions among consumers who perceive such promotional practices as inappropriate. Additional research is needed to explore when consumers perceive anchors to be too high and the associated consequences of employing such anchors (cf. Wegener et al. 2001).

Although grocers normally provide the same discount to consumers who purchase a quantity smaller than that specified in the multiple unit price promotion, our research indicates that a significant segment of consumers are confused about the rules associated with this promotional format. Given that retailers often do not clearly inform consumers about the unrestricted nature of these offers, these promotions and associated practices may warrant the attention of consumer advocates and policy makers. To avoid attention of regulators or negative publicity from consumer groups, it may be in retailers' best interests to clearly note in their promotional circulars, and at the point of purchase, that single units can be purchased at the discounted price. Fortunately for retailers, our studies' results indicate that clarifying the rules will not reduce this promotion strategy's effectiveness.

Our studies were conducted in a lab setting and are therefore limited in terms of their ecological validity. Participants in our studies reported their intentions and results may differ when consumers are faced with actual economic consequences. Studies conducted in the field could overcome this issue and would provide the advantage of examining a cross-section of product category factors and discount magnitudes. Our studies made use of fairly substantial discounts, which are likely to have different economic and information effects than lesser discounts (Raghubir et al. 2004). Also, our studies only incorporated inexpensive products; consumers' reactions to multiple unit price promotions could be quite different when they are used for more expensive products.

Study 2 and 3 findings are consistent with the selective accessibility explanation whereby the effects of multiple

unit price promotions on quantity purchase intentions are mediated by anchor-relevant cognitions. Thus, a significant contribution of the present research is its clarification of the theoretical process via which multiple unit price promotions impact purchase behavior. In Study 3, however, the mediating role of anchor-consistent cognitions falls short of being "complete," and accordingly, it is worthwhile to explore other factors that may contribute to the effects of multiple unit price promotions. We do not find systematic effects of confusion about these promotions' purchase requirements on quantity purchase intentions, yet it may be worthwhile for future research to attempt to examine this factor in its own right.

In terms of future research, it may also be worthwhile to consider individual differences, such as need for cognition and deal proneness, as potential moderators of the effects of multiple unit price promotions. As the use of multiple unit price promotions evolves, studying the use of alternative semantic descriptions, such as the frequently used "mix or match" could also be useful. Exploring these and other potential moderators will provide academics and practitioners with additional insights into this pervasive promotional format.

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