



# The Prevalence and Effectiveness of Price Promotion on Amazon

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**Abstract:** The intention and effectiveness of sales promotion are important topics for manufactures. This research examined the relationship between sales rank and price promotions for appliances and shoes on Amazon. The data set in the paper was obtained from keepa.com, a price tracking website for products sold on Amazon either directly by Amazon, or by third parties who use the Amazon platform. The results show that for appliances, the price tends to remain low in the long term after promotion, while the improvement in sales rank is quite significant. Conversely, for shoes, the price bounces back quickly after promotion, while the improvement in sales rank becomes rather opaque in the long run. This divergent behaviour of the sales rank may be explained by the difference in reason for launching the promotion. While the primary aim for appliance sellers is to increase brand recognition, the shoe retailer is more likely to be clearing inventory because of the fast changes in fashion trends.

**Keywords:** Sales promotion, demand elasticity, retail strategy, Amazon, inventory

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## INTRODUCTION

Sales promotion strategies have been widely used as a mean to attract buyers and increase quantity sold. Sales promotion, as defined by Blattberg and Neslin (1990), is “an action-focused marketing event whose purpose is to have a direct impact on the behaviour of the firm’s customer.” Sales promotion is undeniably an important part of retailing strategy, as roughly 75 percent of the marketing budget is spent on promotion (Low & Mohr, 2000). To understand the objectives of sales promotions, we need to be aware that the primary aim for firms to organise promotions is to increase the quantity sold. This can be achieved through introducing new products, attracting new customer or clearing old inventories.

Many big sale events have become prevalent in recent years, such as the Black Friday and the Cyber Monday. On these particular days, producers offer heavy discounts to consumers, thereby sacrificing profits in the short term. Thus, it is important to find out how the quantity sold changes following the promotion as this allows us to determine the efficiency, and more crucially, changes of the sales trends in the long term. In other words, to know this relationship is crucial for retailers to evaluate if they are using the right promotion strategy.

The aim of this paper is to find the most commonly used strategies that sellers use to maximize efficiency of sales promotions, and eventually profit. The data set in the paper was obtained from keepa.com, a price tracking website for products sold on Amazon either directly by Amazon, or by third parties who use the Amazon platform. The two categories that I am investigating are appliances and shoes, both of which are necessities needed to be bought regularly and widely demanded. These features mean that the expected influence of sales promotion on sales should be bigger and more detectable than for some other products.

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Data sets for both appliances and shoes consist of 1,000 products each. The selection key was that the products are the bestsellers over the past 180 days. Tracing back the selling history, the longest record for appliances started from November 2013, and for shoes from July 2011. Selling history of each individual item ends in April 2019. The frequency of the data is one day.

In this paper, the effectiveness of sales promotion is evaluated by comparing the change in sales rank, which is measured as the difference between the average sales rank in a period of time after the sales promotion and the average sales rank before the sales promotion. The larger the decrease in sales rank, the more successful the sales promotions are.

## LITERATURE REVIEW

It seems intuitive that sales promotions encourage consumers to increase the quantity they buy and to put forward their purchases. In the study of how promotion contributes to the increase in quantity sold, [Bell, Chiang, and Padmanabhan \(1999\)](#) quantifies the extent to which the sales changed and finds an average of 10.6% increase across 13 categories.

In the short term, overall quantity sold is expected to increase as sales promotion offers monetary incentives to consumers ([Dhar & Hoch, 1996](#)). However, some researches show that the effect of sales promotions is likely to dissipate after a period of time ([Steenkamp, Nijs, Hanssens, & Dekimpe, 2005](#)), with quantity sold bound to the previous level.

It is true that promotions can be used to clear up inventories and increase sales in the short term, however, the negative impact on sales in the long term has also been widely observed. Frequent sales promotions make consumers more price sensitive and more aware of price changes ([Boulding, Lee, & Staelin, 1994](#); [Oetomo & Budiyo, 2017](#)). After examining consumers' preference of regular ground coffee, [Guadagni and Little \(1983\)](#) conclude that a promotional price cut can induce a large change in brand preference in the short term. This finding is further enhanced by [Blattberg and Neslin \(1990\)](#) finding that promotions for national brands erode brand loyalty and are likely to have negative effect on purchase event feedback.

The deterioration of brand purchasing can be backed up by self-perception theory, which holds that consumers will question themselves the motion to purchase the product, and if the dominant reason is the promotion, the future purchase of the goods may be eroded ([Dodson, Tybout, & Sternthal, 1978](#); [Kozak, 2018](#); [Marito, Deden, Radi, & Rahmat, 2019](#)).

Many retailers use the sales promotion strategy in the hope that people will change their old purchasing behaviour and switch to buying new brands. But how strong the causation is has long been contentious. [Gupta \(1988\)](#) examines the correlation and finds that 84% of the increase in sale was due to brand switching. This assumption, however, is questioned by [Van Heerde, Gupta, and Wittink \(2003\)](#), who found that the contribution was actually only 33%.

The long-term effect is strongly associated with whether the customers are in the 'brand loyal' segment or the 'switching' segment. Long-term effects are more significant for the 'brand loyal' group as the forward purchasing effects are found to last longer ([Grover & Srinivasan, 1992](#); [Tarman, Soleh, Ari, & Rahmat, 2019](#); [Wichailert & Yousapornpaiboon, 2017](#)).

Brand equity, defined as 'the added value endowed to a product or a service as a result of past investments in the marketing for the brand' ([Tuominen, 1999](#)), is also an important factor in determining the effectiveness of promotions. Views on this topic are subject to controversy. [Dodson et al. \(1978\)](#) find a negative impact of promotion on brand loyalty and brand equity. However, ([Joseph & Sivakumaran, 2009](#)) argue the opposite as they find a positive relationship between two factors, especially in markets dominated by spurious loyal customers, who have a high behavioural consistency but low psychological attachment. Because these customers tend to be those who do not have a high attitude towards brand, so they are more likely to be attracted by sales promotion, thus they are more likely to buy similar products from other manufacturers.

Opinions on how sales promotion affects the brand choosing are also quite divergent. Some researchers show that the added feature of 'promotion' can discourage people from buying due to products being ambiguous in value and impose a negative impact on the brand ([Simonson, Carmon, & O'curry, 1994](#)). The deterioration of sales may also be caused by frequent promotions ([Amatyakul & Polyorat, 2018](#); [Lattin & Bucklin, 1989](#)), which leads consumers to perceive the discounted price as the normal price. But the repurchase probability tested by [Davis, Inman, and McAlister \(1992\)](#) show that promotions do not undermine brands' evaluation. Study on post-promotion brand preference by

DelVecchio and Smith (2005) also shows that on average promotion would not have much effect on brand choosing afterwards. Dawes (2004) shows further that the long-term negative effects will cancel out as much as two-thirds of the gains from the previous promotion.

Another factor that influences the effectiveness of promotion is the promotional elasticity. Narasimhan, Neslin, and Sen (1996) study 108 products with different category characters. Their result indicates that promotions get the highest response for products with short inter-purchase times and higher category penetration. Lattin and Bucklin (1989) show that the elasticity for promotion exceeds price elasticity, which indicates that promotions have a bigger impact than mere price changes. The effect of promotion on the long-term and short-term category demand is evaluated by Nijs, Dekimpe, Steenkamps, and Hanssens (2001), who find a relatively stationary demand in the long run, but a strong impact in the short term with an average elasticity of 2.21.

To attract more switchers in order to gain more revenue, the firms usually fluctuate the price of products from time to time, while trying to avoid decreasing the profits which they obtain from the loyal consumers (Narasimhan, 1988). To carry out a sales promotion, a firm first has to set a 'regular price', based on which the frequency and depth of each promotion is determined. Retailers are more likely to randomize their prices to catch out buyers (Varian, 1980). It is found that frequent shallow discounts are generally more preferable than deep discounts. It is only when price elasticity is high that deep degree discounts are optimal. The depth and frequency of promotions are also found to have an impact on consumers' perception, and the depth characteristic is found to dominate people's feeling about the price.

## BODY OF PAPER

### *Results for Appliances*

**The prevalence of sales promotions:** To find out the frequency of sales promotions as well as their depth, histograms can be drawn to illustrates the distribution of negative change in Amazon price. Such a distribution has a thin tail, which is to be expected, as when price change becomes bigger, promotions become less frequent for sellers to maintain profitability. The pattern also applies to a change in third-party prices.

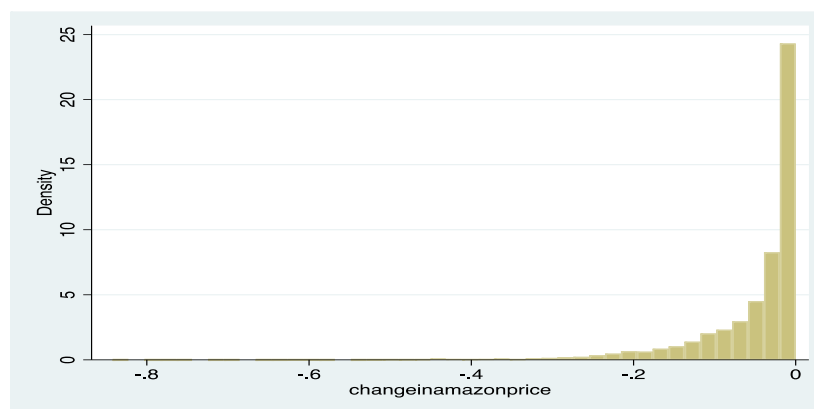


Figure 1 *Histogram of Changes in Amazon Prices of Appliances*

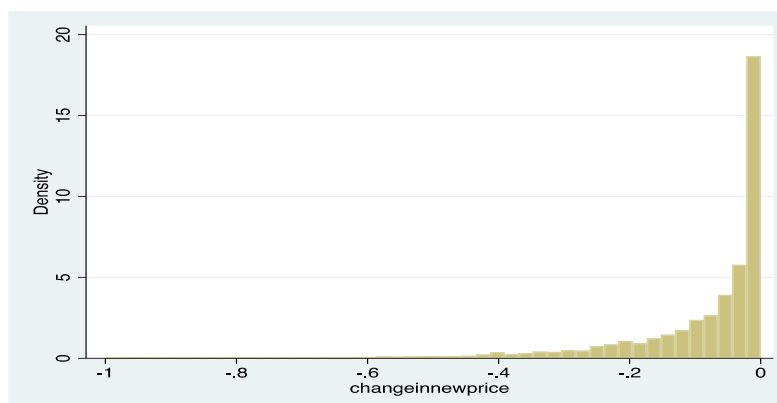


Figure 2 *Histogram of Changes in Third-party Prices of Appliances*

Table 1 *THE EFFICIENCY OF SALES PROMOTION*

Change in sales rank	95% Conf. Interval	
Change in amazon price	0.0568507	0.2215898

Using linear regression, a meaningful positive correlation can be observed between sales rank and Amazon price. When the change in Amazon price is not equal to zero (which is excluded because when price doesn't change, the sales rank fluctuations are expected to follow a random walk, *ceteris paribus*), every 1% change in Amazon price could lead to 0.13% change in sales rank in the same direction. This result is statistically significant at 95% significance level.

Table 2 *EFFECTIVENESS OF A MORE THAN 20% SALES PROMOTION ON SALES RANK OF SHOES*

Change in sales rank	95% Conf. Interval	
Change in amazon price	0.061746	0.2232326
Drop in Amazon price more than 10	-0.0433261	0.038937
Drop in Amazon price more than 20	-0.0587062	0.0991432
Drop in Amazon price more than 30	-0.1466938	0.1733352
Drop in Amazon price more than 40	-0.2370633	0.1878457

By monitoring the change in sales rank related to different degrees of price changes, I'm trying to extract a potential exponential correlation between these two variables, which if justified may explain the motivation for sellers to run sales promotions at a deeper degree. Surprisingly, there is no indication of exponential relationship as expected, as people would assume that a deeper extent of the sales promotion should lead to a higher rate of increase in sales rank. But the result shows that a larger percentage price drop does not necessarily lead to a more than linear change in sales rank.

**How sales ranks change before and after the sales promotion takes place?:** The primary aim for a sales promotion is to increase quantity sold, which can be reflected by the change in sales rank. By studying how sales rank behaves, I want to find out how the sales react with the price drop. The change in average sales rank is calculated using the average sales rank before the sales promotion takes place subtracted from the average sales rank after the sales promotion. Both averages are calculated over a relevant period of time, which is chosen to be between 2 months and 4 months. The box plot shows how sales rank reacts after a sales promotion greater than 30%. Generally, there seems to be a drop in sales rank, which indicates a better sales record after the promotion. This suggests that sales promotions can be effective in terms of increasing the quantity sold.

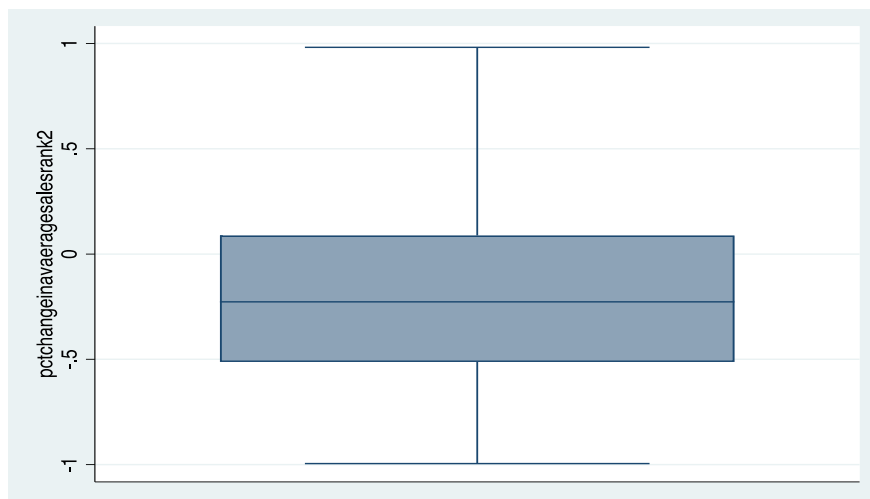


Figure 3 *Box Plot of the Percentage Change in Average Sales Rank 2 Months After a Sales Promotion of More Than 30% For Appliances*

Table 3 *PERCENTAGE CHANGE IN SALES RANK AFTER A MORE THAN 30% SALES PROMOTION AFTER 2-4 MONTHS*

Percentage change in sales rank after 2 months	-22.55628
Percentage change in sales rank after 3 months	-20.66007
Percentage change in sales rank after 4 months	-11.63638

As for quantitative results, the median drop in the average sales rank is 0.23% in a period of 2 months after the sales promotion takes place. However, the effect of the promotion dissipates in a longer term, and the drop of sales rank becomes less significant. A reason for such behaviour may be that a raise in price later on will artificially raise the sales rank, despite the efficiency of sales promotion.

**The price level after a sales promotion:** The next topic to investigate is the behaviour of the price in the months following the promotion: will it bounce back to the pre-promotion level, remain below it, or increase above it? This paper attempts to answer this question by calculating the percentage change in Amazon price for 1 to 3 months after the promotion. The result shows a negative median change of price among all time spans investigated, which implies that the firms are more likely to drop their price permanently. Yet it also shows that in the shorter time period, the price tends to stick at the level which was reached during the sales promotion, but in the longer time period, it starts to move slowly backwards to the pre-promotion price.

Table 4 *CHANGE IN AMAZON PRICES FOR APPLIANCES AFTER 30/60/90 DAYS RESPECTIVELY*

Percentage change in Amazon price 30 days after sales promotion	-30.95235
Percentage change in Amazon price 60 days after sales promotion	-26.6436
Percentage change in Amazon price 90 days after sales promotion	-26.32632

Table 5 *PERCENTAGE CHANGE IN SALES RANK 30/60/90 DAYS AFTER SALES PROMOTION OF MORE THAN 30%, RESPECTIVELY*

Percentage change in sales rank 30 days after sales promotion	-14.32494
Percentage change in sales rank 30 days after sales promotion for products whose price bounced back	-13.25842
Percentage change in sales rank 60 days after sales promotion	-9.84175
Percentage change in sales rank 60 days after sales promotion for products whose price bounced back	-5.31389
Percentage change in sales rank 90 days after sales promotion	-6.54713
Percentage change in sales rank 90 days after sales promotion for products whose price bounced back	-5.33408

**True effectiveness of sales promotion:** To extract the real effect of sales promotion, I now analyse how the sales rank behaves when the price bounces back to the pre-promotion level. As shown in the table, there is on average a 0.05% decrease in sales rank. This implies that sales promotion can have positive effect on sales in the long term, the manufacturers for appliances are likely to benefit from price promotions even after the promotions are over.

### *Results for Shoes*

**The prevalence of sales promotions:** The second data set is consisted 1000 best-selling shoes over the 180-day period. The data traces back the sales for each individual type of shoes over several years.

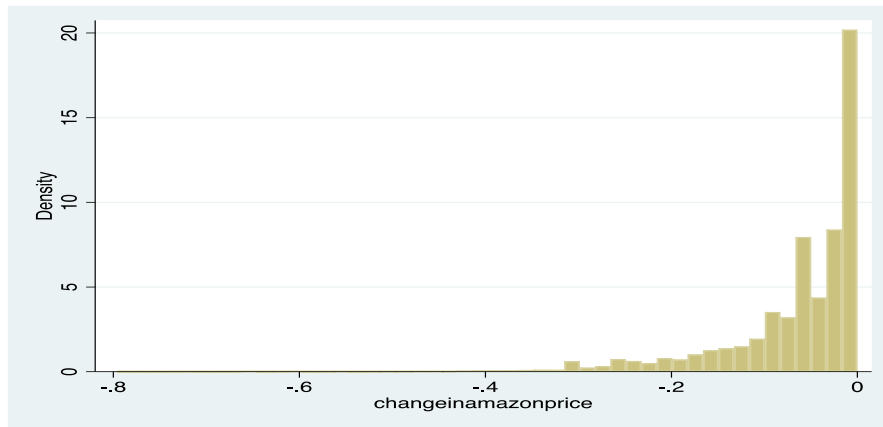


Figure 4 *Histogram of Changes in Amazon Prices of Shoes*

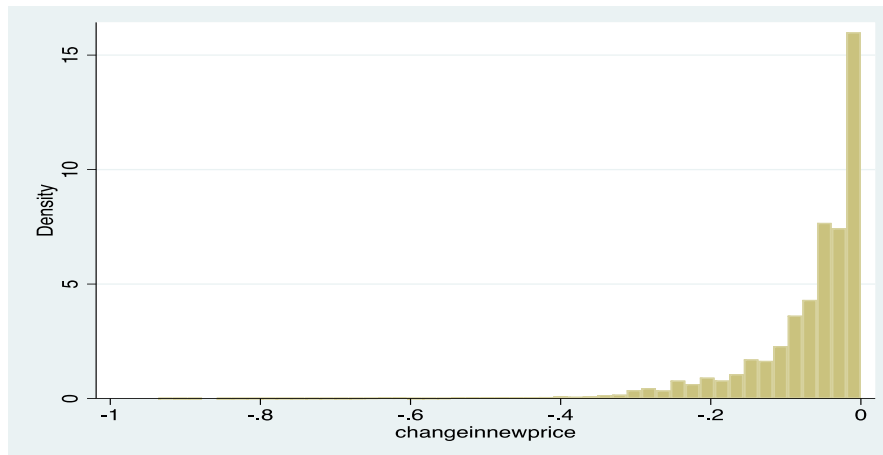


Figure 5 *Histogram of Changes in Third-party Prices of Shoes*

Similar distribution of the different depths of sales promotions can be observed in the histogram. Interestingly, the histogram shows that shallow degree promotions are more prevalent, as a high percentage of the price fluctuation is within 20%, while there are very few cases when price dropped for more than 40%.

Table 6 *EFFECTIVENESS OF SALES PROMOTION ON SALES RANK OF SHOES*

Change in sales rank	95% Conf. Interval	
Change in amazon price	-0.298637	0.06371
Drop in Amazon price more than 10	-0.0177137	0.0447809
Drop in Amazon price more than 20	-0.017035	0.0732573
Drop in Amazon price more than 30	-0.1457621	0.0172115
Drop in Amazon price more than 40	-0.0603324	0.1764788

Similar to the result for appliances, there is no evidence for a justifiable exponential relationship between price and sales rank.

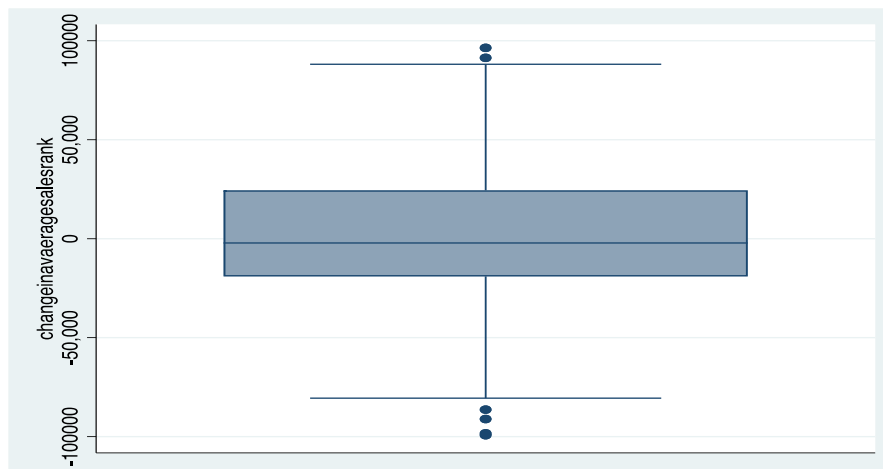


Figure 6 Box Plot of the Change in Average Sales Rank After Sales Promotions of More Than 30% for Shoes

**How sales ranks change before and after the sales promotion takes place?:** The box plot of the change in average sales rank within 30 days period before and after the sales promotion shows a drop in average ranking when a promotion of more than 30% is introduced. A 30% sales promotion leads to a relatively small decrease in sales rank in the 30 days period. Moreover, the effect seems not to last as the median for 2-4 months after are positive (i.e., sales rank increases), implying there's not much improvement in sales rank in the long term, which may be caused by the shoes becoming out of fashion or not suitable to the season, so people stop purchasing it.

Table 7 CHANGE IN AMAZON PRICE FOR SHOES 30/60/90/120 DAYS AFTER SALES PROMOTION, RESPECTIVELY

Percentage change in sales rank after 1 months	-7.02031
Percentage change in sales rank after 2 months	0
Percentage change in sales rank after 3 months	0

**The price level after a sales promotion:** Similar to what is observed in data set for appliances, the Amazon price for shoes are likely to stay at a lower price than before the promotion takes place. In other words, the price decrease is likely to be permanent. The median value is 0.07% lower in price 30 days after the sales promotion. Different from what is obtained for appliances, however, after 60 days the price for shoes tends not to stay at a lower level, but rather return to the pre-promotion level.

**True effectiveness of sales promotion:** The outcome for the change in sales rank in 30 days after the promotion indicates that when the price become higher than before the promotion took place, the sales rank remains lower compared to the level before sales promotion.

But in a longer timespan (more than 2 months), the sales rank bounces back to an even higher level (as indicated in the tables), showing that for shoes purchasing, the effect of sales promotion does not tend to last long.

Table 8 PERCENTAGE CHANGE IN SALES RANK 30/60/90 DAYS AFTER PROMOTION WHEN THE PRICE BOUNCES BACK TO HIGHER THAN PREVIOUS PRICE LEVEL

Percentage change in sales rank 30 days after sales promotion for products whose price bounced back	-6.76719
Percentage change in sales rank 60 days after sales promotion for products whose price bounced back	25.03362
Percentage change in sales rank 90 days after sales promotion for products whose price bounced back	12.81564

## CONCLUSION

From the experiments run in this paper, sales promotions are found to have a statistically significant effect on sales rank. However, the overall pattern differs according to different types of the product sold. For appliances, the prices



remain quite low, near the level of the promotion, and only come closer to the original price in the long run. At the same time, sales rank remains lower than original even in the long run. Shoes, on the other hand, show quite a different pattern, as the decrease in sales rank is followed by a bounce back to the original level rather quickly.

This leads to the natural question about the causes of this difference. A plausible hypothesis that in the fashion sector, where the shoes category belongs, sales promotions are not normally the way to build brand awareness. Rather, they are usually used to clear inventories or catch out those customers who are less price sensitive. Hence, the price of shoes in the long run is likely to get back to the original level, and the sales rank to generally get back or even exceed the pre-promotion rank several months after the promotion.

In contrast, for appliances the sales rank improvement seems to be more permanent, as on average there is a 5% improvement 4 months after sales promotion. A plausible reason is that more people get to know the brand through promotion, and they carry on purchasing regardless of the higher price in the future.

Another potential reason for the different response in sales rank may be the different nature of the products. As for appliances, they are less likely to be affected by trend. For shoes, however, the latest trend is changing very fast. After several months, when the season is over, the shoes may become out of date, which means that the manufacturer will do less advertising on the shoes and people switch to other model of shoes quickly. This provides another reason why sales rank bounces back quite quickly for shoes.

The difference in sales rank level after the sales promotion can indicate that the aim of the promotions organized by appliance manufacturers is quite different from those by shoe manufacturers. Clearing inventories is likely to be the primary aim for shoe sellers as it's hard to stay competitive in the long run, so manufacturers may not advertise or promote the shoes again after the promotion. But for appliance manufacturers, as the products are less likely to wear out or become out of date, the aim will be trying to keep the sales rank lower permanently, which indicates more profit from sales due to a larger quantity sold.

There are a number of limitations to the data and method that I used in this paper. Firstly, as the record of quantity sold is hard to obtain, the sales rank is used as a proxy for quantity. But the sales rank is not equivalent to the quantity sold and it may not be an accurate method of measuring the effectiveness of sales promotion. Many external factors will influence the sales rank while may not affect the quantity sold. For instance, the degree of competitors' promotions affects the relative sales rank, but it does change the absolute quantity sold.

Another limitation is the size of the data set used in this paper. With a sample size of only 1000 items from two specific sectors, my analysis is unlikely to account for all the price promotion patterns across the spectrum of sectors. Furthermore, the choice of data may be biased as only the best-selling products are studied. Consequently, some products may not benefit from sales promotion because of ignorance due to a low popularity, as if no one is aware of the sales promotion, it would be unsuccessful after all.

## REFERENCES

- Amatyakul, S., & Polyorat, K. (2018). The application of brand personality concept to the city context in Thailand. *Journal of Administrative and Business Studies*, 4(2), 54-64. doi:<https://doi.org/10.20474/jabs-4.2.1>
- Bell, D. R., Chiang, J., & Padmanabhan, V. (1999). The decomposition of promotional response: An empirical generalization. *Marketing Science*, 18(4), 504-526. doi:<https://doi.org/10.1287/mksc.18.4.504>
- Blattberg, R. C., & Neslin, S. A. (1990). *Sales promotion*. Retrieved from <https://bit.ly/2X6X4VA>
- Boulding, W., Lee, E., & Staelin, R. (1994). Mastering the mix: Do advertising, promotion, and sales force activities lead to differentiation? *Journal of Marketing Research*, 31(2), 159-172. doi:<https://doi.org/10.2307/3152191>
- Davis, S., Inman, J. J., & McAlister, L. (1992). Promotion has a negative effect on brand evaluations-or does it? Additional disconfirming evidence. *Journal of Marketing Research*, 29(1), 143-148. doi:<https://doi.org/10.1177/002224379202900112>
- Dawes, J. (2004). Assessing the impact of a very successful price promotion on brand, category and competitor sales. *Journal of Product & Brand Management*, 13(5), 303-314. doi:<https://doi.org/10.1108/10610420410554395>
- DelVecchio, D., & Smith, D. C. (2005). Brand-extension price premiums: The effects of perceived fit and extension product category risk. *Journal of the Academy of Marketing Science*, 33(2), 184-196. doi:<https://doi.org/10.1177/0092070304269753>
- Dhar, S. K., & Hoch, S. J. (1996). Price discrimination using in-store merchandising. *Journal of Marketing*, 60(1), 17-30. doi:<https://doi.org/10.2307/1251885>



- Dodson, J. A., Tybout, A. M., & Sternthal, B. (1978). Impact of deals and deal retraction on brand switching. *Journal of Marketing Research*, 15(1), 72–81. doi:<https://doi.org/10.2307/3150402>
- Grover, R., & Srinivasan, V. (1992). Evaluating the multiple effects of retail promotions on brand loyal and brand switching segments. *Journal of Marketing Research*, 29(1), 76–89. doi:<https://doi.org/10.1177/002224379202900107>
- Guadagni, P. M., & Little, J. D. (1983). A logit model of brand choice calibrated on scanner data. *Marketing Science*, 2(3), 203–238. doi:<https://doi.org/10.1287/mksc.2.3.203>
- Gupta, S. (1988). Impact of sales promotions on when, what, and how much to buy. *Journal of Marketing Research*, 25(4), 342–355. doi:<https://doi.org/10.2307/3172945>
- Joseph, J., & Sivakumaran, B. (2009). The moderating effect of loyalty on the relationship of sales promotions and brand equity. In S. Samu, R. Vaidyanathan, & D. Chakravarti (Eds.), *AP - Asia-Pacific advances in consumer research*. Duluth, MN: Association for Consumer Research.
- Kozak, M. (2018). Conceptualizing employer branding: Is the whole more than the sum of its parts? Case study-based evidence from Thailand. *International Journal of Business and Administrative Studies*, 4(5), 197–207. doi:<https://dx.doi.org/10.20469/ijbas.4.10002-5>
- Lattin, J. M., & Bucklin, R. E. (1989). Reference effects of price and promotion on brand choice behavior. *Journal of Marketing Research*, 26(3), 299–310. doi:<https://doi.org/10.2307/3172902>
- Low, G. S., & Mohr, J. J. (2000). Advertising vs sales promotion: A brand management perspective. *Journal of Product & Brand Management*, 9(6), 389–414. doi:<https://doi.org/10.1108/10610420010356984>
- Marito, P. S., Deden, M., Radi, R. R. L., & Rahmat, T. A. (2019). Building the brand identity through brand differentiation based value of culture and locally-global product principles (case on the city of art). *International Journal of Business and Administrative Studies*, 5(5), 63–73. doi:<https://dx.doi.org/10.20469/ijbas.5.10002-2>
- Narasimhan, C. (1988). Competitive promotional strategies. *Journal of Business*, 61(4), 427–449. doi:<https://doi.org/10.1086/296442>
- Narasimhan, C., Neslin, S. A., & Sen, S. K. (1996). Promotional elasticities and category characteristics. *Journal of Marketing*, 60(2), 17–30. doi:<https://doi.org/10.2307/1251928>
- Nijs, V. R., Dekimpe, M. G., Steenkamps, J.-B. E., & Hanssens, D. M. (2001). The category-demand effects of price promotions. *Marketing Science*, 20(1), 1–22. doi:<https://doi.org/10.1287/mksc.20.1.1.10197>
- Oetomo, H. W., & Budiyanto. (2017). Brand image as mediation effect of experiential marketing and differentiation product to the buying decision of Toyota cars. *International Journal of Business and Administrative Studies*, 3(5), 175–182. doi:<https://doi.org/10.20469/ijbas.3.10003-5>
- Simonson, I., Carmon, Z., & O'curry, S. (1994). Experimental evidence on the negative effect of product features and sales promotions on brand choice. *Marketing Science*, 13(1), 23–40. doi:<https://doi.org/10.1287/mksc.13.1.23>
- Steenkamp, J.-B. E., Nijs, V. R., Hanssens, D. M., & Dekimpe, M. G. (2005). Competitive reactions to advertising and promotion attacks. *Marketing Science*, 24(1), 35–54. doi:<https://doi.org/10.1287/mksc.1040.0069>
- Tarman, H. A., Soleh, S. M., Ari, A., & Rahmat, T. A. (2019). Leveraging brand equity by applying brand communication and forming city branding based on unique selling proposition (a case of crafts city). *International Journal of Business and Administrative Studies*, 5(5), 74–83. doi:<https://dx.doi.org/10.20469/ijbas.5.10003-2>
- Tuominen, P. (1999). *Managing brand equity*. Retrieved from <https://bit.ly/34VQzHD>
- Van Heerde, H. J., Gupta, S., & Wittink, D. R. (2003). Is 75% of the sales promotion bump due to brand switching? no, only 33% is. *Journal of Marketing Research*, 40(4), 481–491. doi:<https://doi.org/10.1509/jmkr.40.4.481.19386>
- Varian, H. R. (1980). A model of sales. *The American Economic Review*, 70(4), 651–659.
- Wichailert, K., & Yousapornpaiboon, K. (2017). Brand equity affects brand loyalty of the bottled mineral drinking water in Thailand. *Journal of Administrative and Business Studies*, 3(4), 180–191. doi:<https://doi.org/10.20474/jabs-3.4.3>