

**Summary of Master Thesis: Twinkle, twinkle little star, let the consumer
know where you are!
by Anna Färggren, Martina Vaculik**



Abstract:

Displays in grocery stores that include some kind of motion element are assumed to possess an attention grabbing ability, which is a necessary first step in influencing the customer's decision making. The thesis explores whether so called Electronic paper displays are efficient in grabbing attention and influencing consumer behaviour. Electronic paper displays were tested for two product categories with two distinct messages. Several in-store experiments were conducted where observations, questionnaires, customer eye-tracking, sales data and verbal data collection were used to give the thesis a solid ground. The study also investigated what made the customer consciously notice or not notice the dynamic display.

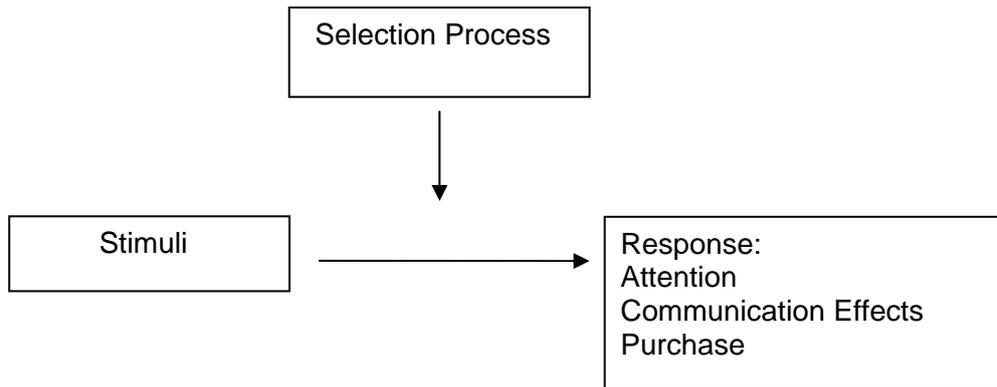
The results indicate that;

- Electronic paper displays increase purchases as well as influence customer associations and intentions. There was a 64% increase in customers picking up the specific products in their shopping baskets.
- Electronic paper displays are able to grab the customer's conscious and unconscious attention. In the study 34% of the respondents consciously noticed the dynamic display.
- Electronic paper displays were most effective for "selection-products"; i.e. when customers are faced with multiple choices in terms of brand and product varieties in store
- Different messages on the displays could influence customer associations to a brand positively or negatively
- Instant likeness of the display could explain why a customer noticed it. However, the instant feeling of it being a persuasive attempt could not explain why the customer did not notice it.

Introduction:

Today endless choices exist for a customer in the grocery store in terms of information, products, brands and prices. Consequently, it is important for retailers and brand owners to gain insights in how they can manage to break through the clutter to reach the customer. The human mind is limited in terms of the amount of information one can hold in its memory as well as how long it can be held. Consequently this leads to humans using their non-conscious processes to easier make decisions. In the grocery environment the customer is goal-oriented and wants to decrease the amount of time spent in the store (Kaltcheva och Weitz, 2006). Nevertheless there is a vast array of possibilities to influence the customer's decision if the shopping environment is inspiring enough and if it is able to catch the customer's attention. Previous research has taken this into consideration and explored possibilities of influencing consumers but very few experiments have been executed in a natural setting (in a store) where the customers have been unaware of the experiment. There is also a lack of studies conducted by objective actors.

The thesis has taken sales of ecological products into account since it is a highly relevant and discussed topic. Ecological products stand for 2,2% of the total sales of groceries and alcohol in Sweden, even though consumers claim that they would buy them more often if the prices were lower, if the assortment was broader and they were displayed better in store (Östgren, Kalle). At the same time a specific in-store communication tool has been become more and more popular to use; flat screen TVs and other displays with moving elements. Neither this type of in-store marketing activity has been tested in a more extensive way in previous research (Nordfält, 2007). That is why this study examined the effect of Electronic paper displays on consumer behaviour in actual grocery stores. Effects on consumer behaviour were tested by examining the variables purchase, planned/ unplanned purchases, consumer habits, purchase intentions and associations.



The results present interesting insights for academics and retailers into in-store marketing, an area that is today largely ruled by guesswork and rules of thumb.

Methodology

The Electronic paper displays used in the study were created in cooperation with Motion Display. The displays were placed on the shelves in front of the actual products that were tested. Two different products were studied; Arla's milk and Ica's crushed tomatoes. Milk was chosen because it is a typical high frequency commodity but it is a low-involvement product. Crushed tomatoes on the other hand is more of a "selection"-product where relatively more brand and product varieties exist. Furthermore the displays were tested with two types of messages. One being a more typical purchase message; i.e. "Out of milk?", "Out of crushed tomatoes?" and the other one being ecologically loaded; "Buy eco!".

The experiment was conducted by a so-called latin-square design in two ICA supermarkets; meaning that variations attributed to the specific stores and calendar-effects were minimized (Shadish et al., 2002). With this methodology the experiment was able to achieve a higher generalizability and accountability. The experiment included observations (2654 respondents), questionnaires (458 respondents), customer eye-tracking, sales data and verbal data collection (121 respondents) to give the thesis a solid ground. The collected data was analyzed by using the statistical tool SPSS with a significance level of 5% (10% was accepted in some specific cases). Moreover, there were no price differences concerning the products in question between the test week and the week the experiment was conducted.

Main conclusions

Purchases

Purchases were measured partially through studying sales data from ICA and also through observing and collecting data from respondents in store. For crushed tomatoes and milk, purchases increased by 64% and 24% respectively, which was statistically significant from the week before when no displays were present and a test group was studied. In the experiment purchases were measured as people picking up the product in question and putting it in their basket to buy it. Measuring purchases this way has been used in several other studies in the field and was considered as more reliable than only studying sales data for the product group.

Variabel	Vara	Kontrollgrupp	Manipulations grupp	Differens	Ökning	Signifikans
Stannat	Krossade tomater	29% (n=640)	38% (n=593)	9%	31%	0,004***
Stannat	Mjölk	45% (n=816)	49% (n=605)	4%	9%	0,409
Köpt	Krossade tomater	11% (n=640)	18% (n=593)	7%	64%	0,012**
Köpt	Mjölk	34% (n=816)	42% (n=605)	8%	24%	0,004***

**Signifikant på 5%-nivå

***Signifikant på 1%-nivå

Attention

Through the immense amount of observations (2654 observations) the study could determine that the Electronic paper displays had an attention grabbing effect. 31% more people stopped in front of the product than when the display was not present. 34% of the respondents consciously noticed the display by responding that they had seen it in the survey. This is interesting to compare with the effect of in-store flat screen TVs, used as a marketing tool, that was examined by Petter Gren in a study from 2005 where only 3% (4 out of 120) noticed the big LCD screens. There can be several reasons for this; for example it is believed that the location of the Electronic paper displays right in front of a specific product is advantageous. Considering the relatively larger cost associated with flat screen TVs compared to Electronic paper displays this is a very useful insight for store managers and brand owners.

Communication effects

The study could also investigate how well the displays were able to convey their messages. This could be tested through the response of ecological associations to the products in question. When the ecological displays were on, people perceived the brands as more ecological, healthy and environmentally friendly than when they were not present. This only benefited the specific brands and not the product category per se. Also peoples' intentions to buy ecological products were higher when the displays were present.

Discussion of main conclusions

The results from this study are valuable for many participants in the industry; primarily for store managers, brand owners and in-store marketers. It is important to understand the variables that come into play when the customer is making decisions in an in-store environment. Some purchase decisions are planned and/or done by routine while other decisions to a large extent are made in store. Surprisingly this study showed that it was possible to alter people's daily routine behaviour for products purchased with a high degree of planning and habitual patterns. The Electronic paper displays appeared effective independent of the type of message that was shown on the displays or the product they meant to advertise.

The study as well as other theories within the marketing area indicates that the specific medium, Electronic paper displays, is most effective for partially planned purchases, meaning when the customer has not fully planned to purchase a product or where the behaviour is not in the same degree determined by a routine response. In this study it meant that displays were more effective for crushed tomatoes than for milk. Presumably Electronic paper displays would have an even larger effect when the consumer is faced with a variety of product- and brand choices as for example in the juice and snacks categories in the store.

References:

Kaltcheva, Velitchka D., and Barton A. Weitz (2006), "When should a retailer create an exciting store environment?" *Journal of Marketing*, 70, January, 107 – 118.

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Shadish, William R., Thomas D. Cook, and Donald T. Campbell (2002), "Experimental and quasi-experimental designs for generalized causal interference", Boston, MA: Houghton Mifflin Company.

Östgren, Kalle, "Miljö viktigare än hälsa när vi handlar ekologiskt", *Tidningen Market*, <http://www.market.se>, [2007-10-01] (Östgren, Kalle)

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(for further references please see full thesis)

Appendix: Messages on the Electronic paper displays and pictures of the displays in store



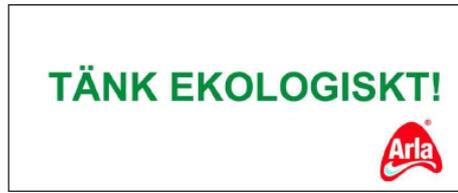
Out of crushed tomatoes?



Buy Eco!



Out of milk?



Buy Eco!



