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The impact of the Ayam Dinging Segar campaign

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Chapter 1 Background

Consumption of poultry meat in Indonesia will increase in the upcoming decennia. This growth of poultry meat consumption cannot be fulfilled without civilian health risks caused by traditional chains of uncontrolled slaughtering and distribution by wet markets and street vendors. In order to realize a shift from classic wet markets and classic street vendors to cooled chains, more than only changing the chain is needed. The image of cold poultry meat needs to shift as well to shift the demand from warm to cold poultry meat, otherwise the demand would be smaller than the offer. Changing the consumer image of cooled poultry meat can be reached by positioning cooled poultry meat on freshness, affordability and the halal origin (the main choice motives for wet markets and street vendors).

In Indonesia, wet markets are by far the most popular place to buy chicken meat, the main Indonesian animal protein source, for household consumption. Next to wet markets, street vendors are also an important distribution channel for poultry meat. All income groups consume poultry meat from the wet market, while poultry from street vendors is bought relatively more by low income groups. Two groups of consumers can be identified in wet market visitors:

- the first group chooses for wet markets from a traditional cultural viewpoint (routine in the family)
- the second group prefers the wet market for the better product quality on freshness, the price level and the guarantee of halal slaughtering.

Although health is an important motive to buy poultry meat, research shows (Tacken et al, 2014) that food safety is a relatively low prioritized buying motive for consumers in the region Jakarta. Consumers prefer healthy poultry meat but prioritize safety substantially lower. Quality, price/quality relationship and price are the most important buying factors in choosing an outlet, closely followed by trust. The food safety motive rating is not income dependent and only low consumption dependent.

End 2013, most consumers were satisfied with the food safety of poultry meat at the preferred outlet. Next to that clients of the wet market and clients of the supermarket rated the food safety of their preferred channel equally. Only clients of the street vendors perceived the poultry meat quality at the street vendor lower.

The most important quality determinants for poultry meat are: color, smell, firmness and texture. Therefore it is difficult for consumers to determine the quality of pre-packed cooled chicken since it is difficult to determine whether the chicken smells right and feels right. In general smell is the second quality determinant for consumers. When enforcement of regulation 2007/4 in Jakarta is aimed, quality control of cooled chicken has to be indicated. In particular, a solution has to be found for consumers to trust cooled pre-packed poultry meat, even though the quality cannot be checked on smell before buying the chicken.

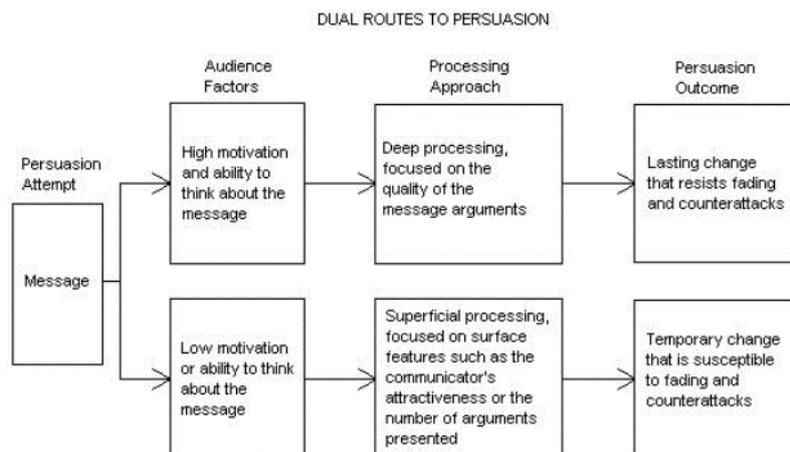
The outbreak of Avian influenza has changed the consumption and buying behavior of 40% of the Jakarta consumers. In general, only 17.8% of the consumers has changed their purchasing behavior from street vendor and wet market to modern markets in the last years. 14.9 % changed from wet market to street vendors, 6% changed from street vendor to wet markets and 1.4% from modern markets to wet markets (Tacken et al, 2014) . All these changes were probably based on trust in the supplier which changes or became stronger due to the outbreak of Avian influenza.

So, to develop a situation in which a large fraction of the poultry meat reaches consumers via cooled chains with conditioned slaughtering, higher food safety and quality levels, both the chain and the

consumers' food safety and quality perception of cooled chains needs improvement. The perception of freshness, affordability and halal guarantees of cooled chains has to be cultivated.

Development of an Ayam Dingin Segar Campaign

The design, implementation and impact assessment of the consumer campaign is based on the Elaboration Likelihood Model ('ELM' developed by Petty and Cacioppo, 1986). The diagram below provides a simplified version. Based on the ELM, attitude change may occur via two routes of influence: the central route and the peripheral route.



The two routes differ in the amount of thoughtful processing of information or elaboration. Individuals taking the central route think critically and logically about issue-related arguments and scrutinize the merits and relevance of those arguments before forming an attitude about the advertisement or product. Conversely, individuals taking the peripheral route make less cognitive effort and rely on shortcuts such as the number of arguments and physical attractiveness of endorsers when forming an attitude. Elaboration likelihood is determined by an individual's motivation and ability to elaborate. In this campaign, both central and peripheral route communication is necessary to convince the consumers, since some people in the target group lack information while others lack interest and buy routinely the warm poultry meat at the wet market or the street vendor.

Goal: The goal of the consumer campaign was to increase the awareness, interest and desire for cooled chicken among consumers in the West Java region. To do so the perception of cooled (ASUH) chicken needs to be improved by the end of the campaign (2016).

The campaign team had set the following objectives.

- a. By mid-2017 the number of consumers in the target group who are aware that cooled chicken is fresh, versatile and convenient is increased with 30% as a result of the campaign.
- b. By mid-2017, the number of consumers in the target group who perceive cooled chicken as fresh, versatile and convenient as warm chicken will have increased with 20% as a result of the campaign.
- c. By mid-2017, the number of consumer the target group who prefer cooled chicken above warm chicken will have increased with 20% as a result of the campaign.

d. By mid-2017, the number of consumers in the target group who are motivated to change their buying behavior to an outlet where they can buy cooled chicken will have increased with 20% as a result of the campaign.

e. By half 2017, the number of the target group in the selected area who have an intention to buy cooled chicken on basis of the perception that cooled poultry meat is healthy, affordable, convenient, halal and of good quality will have increased with 20% as a result of the campaign.

Primary target groups: consumers from middle and higher income groups who buy the poultry meat from wet markets and/or street vendors; with who find convenience, quality, price/quality, brand and availability important. Within this group there was a focus on woman who are responsible for buying the groceries for their families and who also shop in supermarkets, and therefore already have access to cooled chicken. A target area within the western Java district will be selected for the campaign in which wet market and modern market are both present. We consider this group as early adopters of new products and as key influencer of the buying behaviour in other income groups.

Chapter 2 Introduction to the impact analysis

In pursuit of a more robust economy, a safer food chain or any other improvement, we design and implement interventions that intervenes with the normal Indonesian way of doing. Many of those interventions succeed and even more so fail, often without knowing the real outcome or how we got there. To truly prove the value of any intervention you have to unleash it to the masses and measure the impact. And that is exactly what this chapter is about. In this report we will describe what the effect was on a sample of adult woman in the greater Jakarta region. The campaign Ayam Dinging Segar (ADS) has been designed based upon market research and evaluated on the same standards is was designed upon. The campaign was a social intervention within the scope of a larger effort to improve the food chain of cooled chicken.

The design of the campaign was built upon three established theories of marketing and food behavior. The ELM model as described in the previous chapter, but also on the AIDA model (Hassan, Nadzim, & Shiratuddin, 2015) and Food Choice Motivations (Step toe, Pollard, & Wardle, 1995). Where the ELM model was taken into consideration before the design of the campaign started, the AIDA model and the Food Choice Motives (FCM) were an integral part of both the design and the impact assessment.

The *AIDA model* exists out of the steps, awareness, interest, desire and action. It is a widely used model for marketing and advertising that describe several steps consumers go through when they get into contact with a new product, or in this case a range of products. The model is sequential, meaning that consumers most ordinarily move from awareness gradually towards actions. That consumers go through the steps sequentially is however is not necessarily so. The linearity is steps counts for both cognitive processes (what people are aware of) and affective (emotional) processes. The model helps understanding the parts of the marketing campaign are useful and in which stage people are.

The *food choice motivations* are primarily used as a good predictor of food choice. And thus knowing what the food choice motives are gives a good insight into what needs to be changed about the product or campaign to adhere to what people really find important. The Food Choice Questionnaire (FCM) was originally developed by Steptoe and colleagues (1995). The FCQ is often used for measuring food choice motives and consists of 36 items to measure 9 underlying motivations: health, mood, convenience, sensory appeal, natural content, price, weight control, familiarity and ethical concern. The FCQ has been used and tested in many different studies (Insch & Jackson, 2014; Onwezen & Bartels, 2011; Sautron et al., 2015; Steptoe et al., 1995; Verain et al., 2012). The original questionnaire is aimed to ascertain insights into the importance of these constructs on an average day, but differences in importance ratings exist across consumer groups, across situations and across product categories (Verain, Sijtsema, & Antonides, 2016). The original FCQ was developed in the United Kingdom, but is validated in many countries, amongst others in Belgium, The Netherlands, Hungary, Romania and the Philippines.

The goal of the campaign was to "change people's attitudes, intentions and the desire for cooled poultry meat"(DIFS Annual Report 2017).

Apart from the AIDA model and the FCM insights into behavior of the population are needed to quantify the effects of the social campaign. Previous studies on the effect of social campaigns on cooled poultry in Indonesia have not dealt with an effect measurement that compared pre and post intervention data.

The purpose of this study was to quantify the effects the consumer campaign had on the population of the greater Jakarta area (Jabodetabek). We distinguished the following aspects of consumer perceptions and behavior:

- Awareness
- Interest
- Desire
- Motivation
- Behavior

The following chapter, methods, will briefly explain concepts as awareness and food choice motivations. This information will contribute to the understanding of why the campaign was designed in this form and later on evaluated on the same aspects. Chapter 3 gives a brief overview of the methods used and will go into the design of the study. Chapter 4 will provide the results of the effect measurement. Finally the conclusions will be provided and discussed.

Chapter 3 Methods: measures before and after the campaign

Inception phase

Prior to commencing the study, research was done in an inception phase. The inception phase provided insight into the current behavior and choice motivations regarding poultry meat. From that study we were able to use information regarding the use of the Food Choice motivation Questionnaire, the perception of chicken with regards to the same motives and where people buy their chicken.

Sample and procedure

The research design objected to do a longitudinal study with 2000 woman in the Jabodetabek region, who were interviewed before the campaign and after the campaign. By doing so we measured the difference in awareness, interest and desire towards cooled poultry meat. Participants were recruited by PT Masasi. Participants were recruited across the following regions: Bekasi East Jakarta Central Jakarta Tangerang Bogor, South Jakarta, West Jakarta, Depok, North Jakarta. The initial sample consisted of 2056 woman of which 37 dropped out for the second questionnaire.

Information on the consumer campaign as described in the introduction can be found on the website <http://www.difslive.com>. The campaign consisted out of multiple parts, from roadshows with live cooking, celebrity endorsement, on- and offline articles and social media accounts.

Prior to commencing the structured interviews, informed consent was asked. After consent the participants went through a questionnaire the first time (T1). The questions were asked by trained interviewers, students of IPB, and the answers were immediately reported by the interviewer on a tablet.

The first interviews were held during august and September 2016 (T1) among 2056 woman living in the greater Jakarta region, this was prior to the start of the campaign. The participants were not told about the campaign. After the campaign had run for 6 months, the subsequent survey questionnaires were given after Ramadan 2017 (T2).

So for both questionnaires the same people were interviewed, excluding 37 participants that dropped out. The final panel consisted out of 2022 woman with an average age of 38 years. Participants were thanked for their time and effort and received a small gift for their participation.

Measures

The questionnaire consisted of questions related to; social demographics; awareness about cooled, frozen and warm chicken; interest for cooled, frozen and "warm" chicken; buying behavior related to cooled, frozen and warm chicken; usage behavior related to chicken; food choice motivations related to all three types of chicken. At T1 the demographics were not asked again, questions about the awareness and interest in the ADS campaign were added. When possible, 7-point Likert scales were used.

The Food Choice motives questions were added with questions regarding the importance of halal and adapted to ask for the perception of cooled chicken rather than the standard, "the importance of X on a typical day". Finally the questionnaire was translated into Bahasa Indonesia and translated back into English as a check-up. To increase the reliability of measures non-related measures were included in the initial survey (T1) to be able to compensate for possible ceiling effects (when people mainly score as high as possible on a scale). Finally they did not seem necessary since we did not encounter a ceiling effect.

Some example questions are the following:

- Awareness: "How much do you know about cooled chicken?"
- Where to buy it; How to prepare it, etc.
- Interest: What type of information do you use related to cooled chicken?
- e.g. "I will often use recipes regarding [...]"

- Desire: "I desire to buy cooled chicken in the near future"

Data analysis were performed in using R (version 3.4.0), IBM SPSS statistics 23 and Microsoft Excel 2016.

Chapter 4 Results

The purpose of the consumer campaign was to increase the awareness, interest and desire for cooled chicken. We also expected changes on the participates evoked choice set (all the possible options one considers to buy) and finally possible changes in their buying behavior (which can also be considered as the action phase of the AIDA model). Below in Figure 1 the results of the 0-measurement are shown next to the target set by the campaign team.

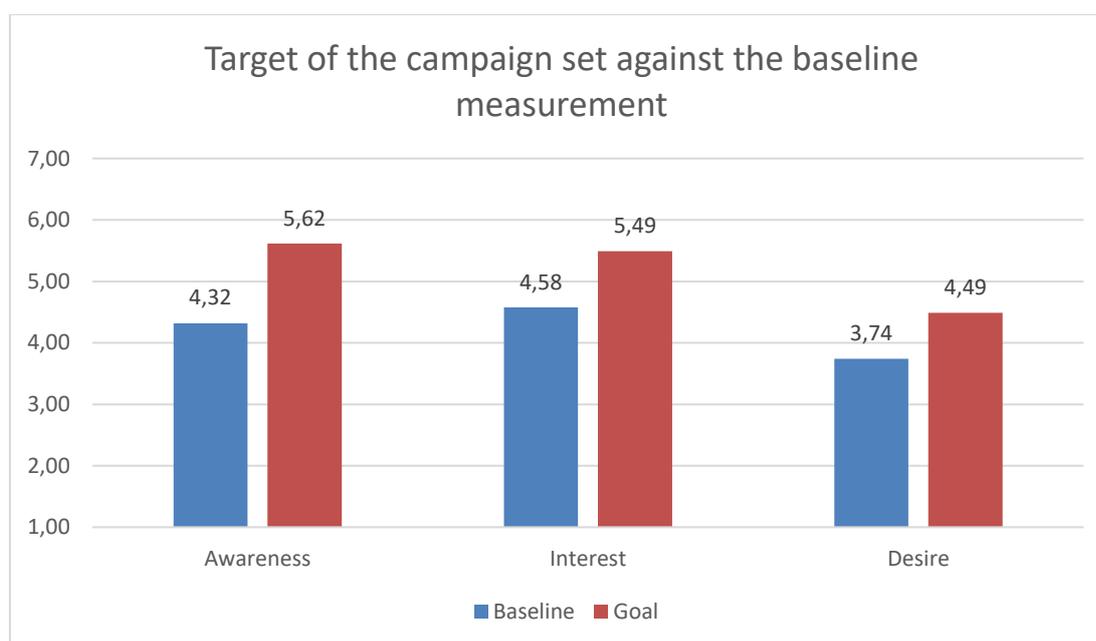


Figure 1: 0-measurement (baseline) scores compared to the goals of the campaign.

AIDA results

The first set of questions aimed to gain insights into the constructs of awareness, interest and desire. Figure 2 provides the overview of the baseline measurement at T0 and the effect measurement at T1. It is apparent from this table that the goals have not been reached, as no change is seen for awareness. We do however see an increase in interests and desire. Simple statistical (paired sample t-test) analysis was used to make sure the two measurements were different. Therefore, we can conclude that exposure to the campaign led to greater interest ($t(2004)=-6.99$, $p < 0.05$), desire ($t(1921)=-12.28$, $p < 0.05$), but not for awareness ($t(2000)=0.10$, $p > 0.05$). When however, we look at the people that did not eat cooled chicken at baseline ($n=1218$) the mean score on awareness increases from 3.84 to 4.32 ($t(1218)=-8.85$, $p < 0.05$) and is significantly different. There are multiple possibilities why this effect is not found in the total sample, this will be discussed in more detail in the discussion.

Although we did not expect to have a large effect in the action phase of the AIDA model, we did measure it indirectly. In Figure 3 a big increase for cooled chicken ($t(2004)=-15.61$, $p < 0.05$) and a small increase for frozen and warm chicken can be seen in terms of how often cooled chicken is used. Interestingly the increase in cooled chicken does not seem to hurt the use of warm chicken. All the differences are significantly different.

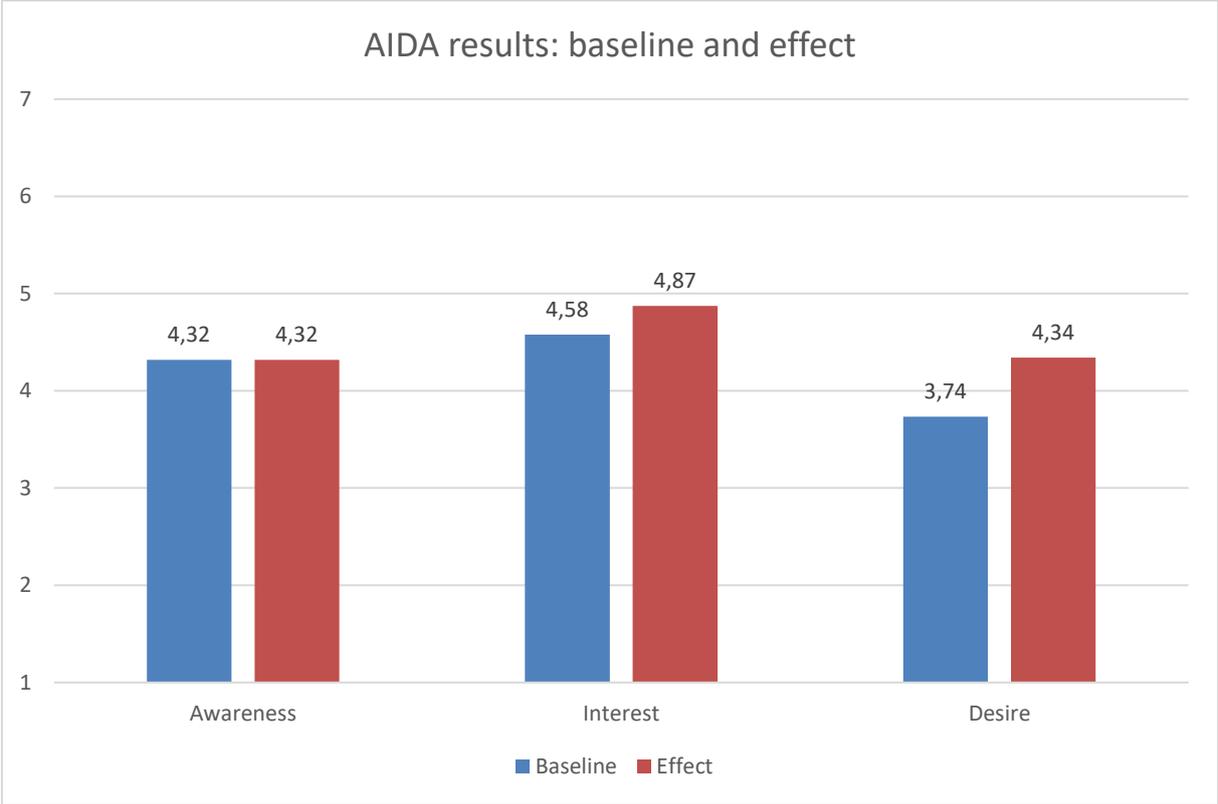


Figure 2: Baseline and effect measurement of awareness, interest and desire. On the left, awareness with no average change, and interest and desire with a significant increase.

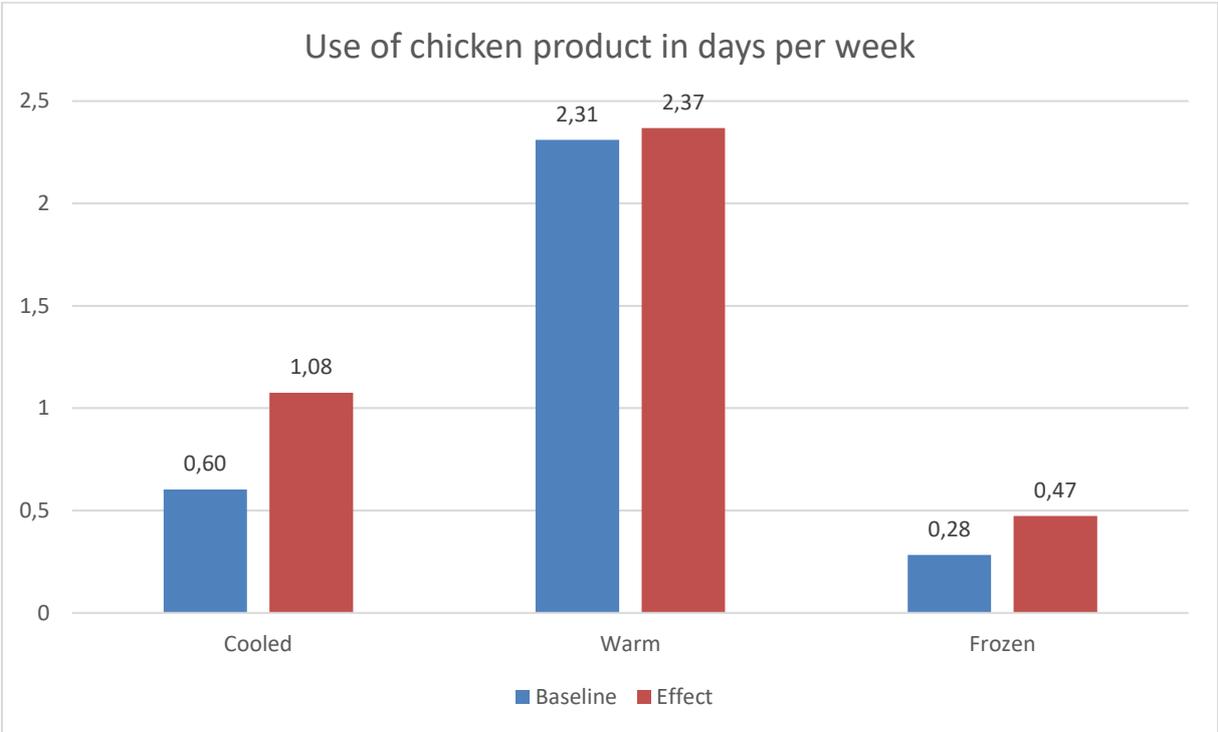


Figure 3: The average amount of days per week a family eats cooled chicken. Here the baseline is compared to the effect measurement.

Evoked Choice set and other buying behavior

Here you can see which types of chicken (warm, cooled or frozen) people consider to buy. Looking at Table 1: Evoked choice set it seems apparent that the campaign had a large effect on the evoked choice set. You can see an increase in the amount of people that also considered cooled and frozen chicken when you compare before and after the campaign. The effect seems larger than what we have seen on the other factors such as interest and desire, more on the possible reasons in the discussion paragraph.

Even when taking into account the difference between the people who are sure they have seen the campaign and those who are unsure and have not seen the campaign, the effect remains as can be seen in Table 2: Evoked choice set for only people who have seen the campaign. Note that the effect is larger for people who have seen the campaign than for the whole population.

Table 1: Evoked choice set for the whole population

N=2060	Baseline	Effect
Warm chicken	1969	1911
Cold chicken	560	1038
Frozen chicken	258	531

Table 2: Evoked choice set for only people who have seen the campaign

N=479	Baseline	Effect
Warm chicken	462	443
Cold chicken	146	362
Frozen chicken	76	210

Perception of cooled chicken

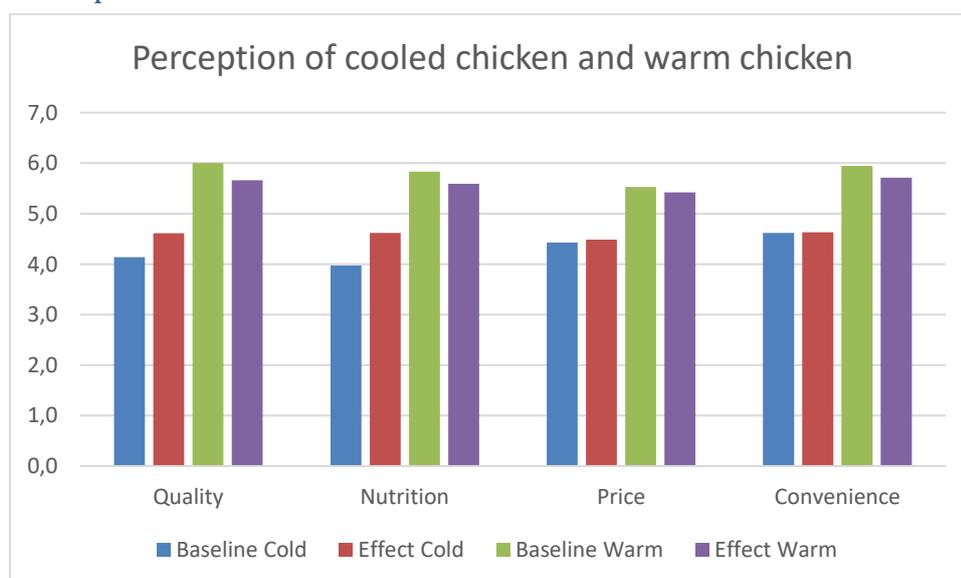


Figure 4: perception of cooled and warm chicken

The campaign was aimed at changing the perception of chicken on the factors of quality (including freshness), nutritional value and convenience of cold chicken. What stands out in Figure 4 is the large positive increase on the factors of quality ($t(2004)=-16.73$, $p<0.05$, $r=0,30$) and nutrition perception ($t(2004)=-13.34$, $p<0.05$, $r=0,35$) of cold chicken when the baseline and the effect measurements are compared. We can also see significant decreases on the factors of quality and nutrition for warm chicken, the effect is however smaller ($0,27$). Furthermore it can be seen that the perception of warm chicken is still rated higher overall on all attributes.

Manipulation check

Due to the lack of ability to create a truly randomized controlled trial we included a manipulation check in the questionnaire. The check was a question whether the participant has seen the campaign or not. Although not a clean measure, it can give indications into the effect of the campaign. The majority of the people were not sure if they had seen the campaign (832), 696 people thought they did not see the campaign and 487 were sure they had seen the campaign.

Chapter 5 Conclusion and general discussion

The present study was designed to determine the effect of the campaign on the perception of cooled chicken. The campaign had set several goals before the campaign started, of which a couple are reached (changing buying intention and increasing positive perceptions of cooled chicken). There was an increase found on the interest, and desire factors, but not on the awareness factor. People who did not eat cooled chicken in the first place however did show an increase in awareness. A possible explanation can be found in the fact that these people were already aware of cooled chicken and that this goal was not so suitable for this general population (rather than targeting only people who are not consuming cooled chicken).

The most compelling finding however, is not that some of the goals were not reached, but that a significant improvement was found in the evoked choice set and the action phase of the AIDA model. Significant increases in the use of cooled chicken were reported by the panel, which is an effect that was not even expected yet by the campaign team. Even though the conclusion is that not all the goals were reached, one could also conclude that overall there is a positive outcome. Interestingly the effects on the evoked choice set were a lot larger than what was seen in the effect on interest and desire. It is possible that an increase in for example desire is much more meaningful than only changing the considered options. When someone truly desires something, she or he will buy the product when possible, while considering the product does not mean she or he will buy it. Desire is thus probably more impactful.

It is encouraging to see these changes by a relatively small campaign, in a large city with a relatively small sample (roughly 2000 people on a city of millions). That the initial goals were not reached could be due to the fact that the campaign had aimed at the upper class rather than the whole population. The upper class or higher income families were chosen because they were most likely to act as early adopters of cooled chicken and from there on this behavior would trickle down to the other income classes. This is a valid way of reasoning, notwithstanding that these specific people might just were already more informed about cooled chicken. Future research could widen the scope and look into the effects on all income levels rather than only the higher income levels.

Another interesting and important result is the change of the perception of cooled chicken on the construct from the food choice motives. Food choice motives have repeatedly shown to be very important factors in explaining consumer behavior. Furthermore are food choice motives seen relatively stable traits that do not change all of a sudden, which in turn means that changing these beliefs might relate to a longer lasting effect of the campaign.

We included the question whether people had seen the campaign as a manipulation check. It is however doubtful if the check itself was good enough. There were more people in doubt whether they had seen the campaign (832) than there were people who claimed they had not seen the campaign (696) or who were sure they had seen a part of the campaign (487). For that reason the manipulation check should be treated with caution. There are several possible explanations for this result, one of which is that there were many parts to the campaign, from social media messages to roadshows, which could have confused the participants. The effects were persistent even when people thought they did not see the campaign. That the effects are also measured for the people that had not seen or were unsure if they had seen the campaign could possibly be explained by that there is autonomous desire for cooled chicken. This effect can for example be seen in the evoked choice set, there we see a larger effect for people who have seen the campaign than for people who have not.

A key strength of the present study was that the information of the 0-measurement was instantly implemented by the campaign team. After this sharing of information the two teams worked independently to assure no conflict of interest. A limitation of the present study was that the effect of this collaboration cannot be analyzed.

These results have important implications for the cooled poultry chain. Whereas research and policy often focusses on the chain itself, this research has shown that focused attention on the consumer

perception can make the demand for the product, and thus being a factor as the driving force for change. Without the demand for the cooled products the effects elsewhere in the food chain might become sub-optimal.

Finally as a result of the campaign and these investigations, the efforts to change attitude towards cooled chains might be taken up by commercial companies and in that way try to improve the cooled poultry chain.

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