

# **THE OPTIMAL PROMOTION STRATEGY FOR INSECT BURGERS**

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**Abstract:**

Many studies have been done about insects, but not about the promotion of products including insects, for example insect burgers. Insect burgers are sold less. Many people are afraid for insects or have disgust towards insects. This study explores which promotion strategy (free sampling, food event or electronic word-of-mouth) has a more positive attitude, more positive emotions and less negative emotions, compared to the control group, which result in a higher willingness to pay and a stronger intention to eat. Dutch ( $n = 178$ ) consumers evaluated one of the four scenarios; control group, free sampling, food event and electronic word-of-mouth, which were randomly assigned. Compared to the control group, food event and eWOM result in a more positive attitude. Besides, eWOM and free sampling lead to lower disgust and fear, while food event result in more happiness. In addition, a positive attitude result in a higher willingness to pay, while attitude and happiness have a positive effect on the intention to eat. Because food event has both a higher attitude and more happiness compared to the control group, it is the only promotion strategy which have a direct effect on willingness to pay and intention to eat. So, food event is the optimal promotion strategy for insect burgers. Therefore, insect burger should be sold on food events.

## **Preface**

This thesis has been written in three months under the supervision of dr. ir. A.R.H. Fischer. The interest for insects as food has begun during my study at Wageningen University. During the introduction of my study (AID), other students asked if I would like to taste a cookie with maggots. In the beginning, I was afraid towards the insects, but I decided to eat the cookie with maggots. It was totally unexpected; the taste was very good. Later on, I read about the healthy aspects and about the environmental friendly aspects of insects. My interest for insects as food increased. In the media, I heard once that insect burgers came on the market. However, since that moment I never heard something about the insect burgers anymore. In the Netherlands, Jumbo is the only supermarket that sold insect burgers. However, the local Jumbo in my town do not have any insect burgers in the shelves. So, there was something wrong with the promotion of insect burgers. Therefore, I decided to write my thesis about the promotion of insect burgers. The three months writing my thesis have flown by. I would like to thank dr. ir. A.R.H. Fischer for the guidance and support during this research.

I hope you will enjoy reading this paper.

Esther Boekhorst

Wijchen, January 27, 2017

**Table of Contents:**

<b>1. Introduction</b> .....	5
1.1 Problem indication .....	5
1.2 Problem statement.....	6
<b>2. Literature</b> .....	7
2.1 Insects as food .....	7
2.2 Promotion of insect burgers .....	8
<b>3. Hypotheses</b> .....	12
<b>4. Research design</b> .....	13
4.1 Stimuli .....	13
4.2 Measurements .....	13
4.3 Data-analysis.....	14
<b>5. Results</b> .....	15
5.1 Attitude.....	16
5.2 Emotions.....	16
5.3 Willingness to pay and Intention to eat .....	17
<b>6. Discussion</b> .....	18
6.1 Limitations and Future Research.....	22
6.2 Conclusions.....	22
<b>References</b> .....	23
<b>Appendix 1: Survey</b> .....	26

## **1. Introduction**

### **1.1 Problem indication**

Meat is very important in the consumption pattern of the current Western society. Since the 1960's, the consumption of meat has increased. This is the result of increased sensory qualities of meat and production efficiency in the meat industry. In addition, the increase in income and standard living leads to increased meat consumption (Megido et al., 2016).

Unfortunately, the production of meat has a major negative environmental impact. Through continued growth of both world population and income per capita, large global environmental pressure is generated by food related activities (Aiking, 2011). Meat production has a negative impact for the future climate. The production of meat results in emissions of methane, nitrous oxide ammonia and greenhouse gases. Livestock producing is responsible for 18% of the emissions, which came from feed production and processing, greenhouse gases from digestion by cows and fertilizer. Besides, meat production leads to depletion and polluting of scarce water. Animal waste, antibiotics, hormones, fertilizers leads to water pollution (Stoll-Kleemann & O'Riordan, 2015). Furthermore, producing one kg meat requires about hundred times more water than producing one kg of grain protein (Pimentel & Pimentel, 2003).

To promote the reduction of meat consumption, new trends are observed. "Less is better" strategy reduces the portion sizes of meat and meatless days are introduced. Also meat alternatives are introduced. One of them is the consumption of insects. Insects are very environmental friendly, because they have high conversion rates, which means they are bred efficiently (Megido et al., 2016). Insects are efficiently to produce, because they are high in fertility. It depends per species how long they bred, but the breeding length can be shortened by circumstances created by humans, like higher temperatures and high-quality feed. For example, crickets lay around 1300 eggs over a period of 4 weeks. (DeFoliart, 1997). Moreover, in contrast with meat, insects have low greenhouse gas emissions and ammonia emissions, which means low environmental impact (Schouteten et al., 2016). Another benefit is that insects require small breeding space. In contrast with livestock, where a high number of animals per surface area raise concerns about animal welfare, insects live naturally in crowded conditions (Van Huis, 2013). Next to these environmental advantages, insects are very nutritious, because they are high in protein. (Megido et al., 2016).

In tropical and developing countries, insects are part of the human diet (Van Huis, 2013). However, in Western countries, the consumption of insects is actually very low. One reason for this is food neophobia. Consumers are reluctant to try new food products, because they are afraid of a negative sensory experience (Megido et al., 2016). Other reasons for the aversion of consumers towards food products containing insects are health and safety concerns, because consumers link insects with unsafety and diseases (Schouteten et al., 2016). Moreover, consumers are influenced by their culture. Thereby, in the Western society insects are not familiar as food products, but as pests. Individuals learn through sensory experience which products they like. This starts at a young age through social learning, which is influenced by their culture (Tan et al., 2015). Consumers link insects to negative sensory perceptions like flavour, appearance and texture. To decrease this negative experience, insects should be hidden and invisible. The invisibility of insects leads to a decrease in food neophobia. When consumers see insects in their food, they do not feel

comfortable with that, which lowers their taste experience (Elzerman et al., 2011). As a result, insects were hidden in food products, for example insect burgers were invented. Despite the fact that insect burgers decrease food neophobia, the consumption of insect burgers is still very low.

### **1.2 Problem statement**

Each study mentioned above, discussed one of the four P's of the marketing mix, namely product, place, price and promotion (Kotler & Keller, 2012). Particularly, solutions for the problems related to the product are mentioned. Moreover, studies with solutions about the place, where insect burgers should be sold, and solutions about the ideal price of insect burgers do not exist. Those two P's will not have the main focus in this article. Furthermore, little research has been done about the promotion of insect burgers, but this is not sufficient. For new food products, promotion is very important, but insect burgers are barely promoted in the Netherlands.

The aim of this study is to provide an optimal promotion strategy for insect burgers.

## **2. Theoretical Framework:**

### **2.1 Insects as food**

Consumers, who are familiar with the idea of consuming insects and reducing meat consumption, are more likely to adopt insects as a meat substitute. Particularly, consumers who want to reduce environmental issues are more likely to consume insects compared to the wide population. Adopting insects in human diets is more likely when people highly value the environmental impact of their food, highly value their health related to food choices and are more focused on convenience food. However, adopting insects as food is lower among people who highly value the taste of meat and belief that meat is healthy (Verbeke, 2015). Many vegetarians see insects as animals and will not eat them. Insect burgers are better for the meat-reducer or flexitarians or for environmentally-motivated vegetarians, who are willing to eat insects. (House, 2016)

Motivations for eating insect burgers are curiosity, it is more environmentally-friendly than meat, it is a healthy product and it provides variety into human diets. (House, 2016).

Factors related to repeat consumption of insect burgers are price, tastiness, the availability of insect burgers, and the degree to which insect burgers can be included into a diet. Another factor is that the status of insect burgers is more ethical for animal welfare and environmental reasons, compared to meat. For repeat consumption, all these factors are required. However, there are also negative reasons like the price, because the price of insect burgers is relative high. Besides insect burgers were unavailable which lead to a passive rejection, despite consumers are willing to buy insect burgers. Insect burgers which are sold in supermarkets, fall in the same category as more conventional food. Participants found practical factors as price more important than ethical principles. (House, 2016)

Because of food neophobia, it is important that consumers recognize insect burgers as a product that should be eaten instead of meat. So, the form, sensory properties and the usage of insect burgers should not differ too much from meat. Many consumers highly value the taste and texture of meat, particularly juiciness and tenderness (Elzerman et al., 2011). So, insect burgers should look like meat burgers, because this increases familiarity for insect burgers (Megido et al., 2016).

Insufficiently information is provided to create consumer's awareness about the impact of food choices and the environment (Megido et al., 2016). To reduce food neophobia, consumers should be educated on cultural, nutritional and environmental effects of insects (Elzerman et al., 2011). However, research has shown that this is not very effective. Concerns about environmental impact are not the primary focus for consumers when they consume food. Consumers are more focused on health benefits than on environmental impact of insects. Due to this reason, health is a strong factor that influenced the food choice of consumers. A strategy is to communicate with people who want to reduce their meat intake and would like to eat insects (Verbeke, 2015). Besides, the frequency of exposure and experimental tasting of insects should be increased. Consumers have significantly more positive attitudes towards insects and are more likely to eat them in the future, when they have already eaten insects (Megido et al., 2016). Moreover, consumers have to know where the insects can be obtained and how the insects should be prepared (Elzerman et al., 2011). Insects are increasingly served as a delicacy and more insect recipe books are available. Besides, more recipes with insects are on television and there are more insect food festivals (Verbeke, 2015).

In the Netherlands, insect-based convenience foods, named 'Insecta', is produced by the Belgian company Damhert Nutrition. The Insecta products are available in the supermarkets

of Jumbo, a Dutch supermarket chain. These products are stocked in shelves with other meat substitutes, such as soy-based convenience foods or vegetable-based convenience foods (House, 2016).

Insect-based foods will only be successful if insect burgers can be compared to current Western food at price level, tastiness and availability. Consumers only pay a higher price for new food products, if these products have other benefits than the existing food products. The price of Insecta is relative high. One packaging of Insecta consists of two insect burgers, and cost around 4 euro.<sup>1</sup> This is more than most vegetarian products, which cost around 2 or 3 euro, and more than meat products, which cost between 1 and 3 euro (House, 2016). In the study of House, the majority of the participants mentioned the high price. The perception of price is very important in consumer buying decisions. To create attractive price perceptions for consumers, manufacturers and retailers develop different pricing tactics (House, 2016).

## **2.2 Promotion of insect burgers**

To promote products and services, a marketing communication mix is invented by Kotler and Keller. There are some challenges for promoting insect burgers. The following promotion strategies are less likely for insect burgers.

Some actions of sales promotions are useful for insect burgers, others are probably less effective for insect burgers. Examples are the use of coupons and premiums, which provide discounts for specific products and services. Both are less effective for insect burgers, because after the discount period, consumers will not buy the product anymore, because of the high price of insect burgers. In addition, prizes, which offer a chance to win something and Point-of-Purchase displays, are also not likely to be effective for insect burgers, because first the sales of insect burgers should be drastically increased. Finally, tie-in promotions are not attractive for insect burgers. Tie-in promotion means simultaneous promotion of two or more brands in one campaign (Kotler & Keller, 2012). For a company who want to collaborate with a company which produce insect burgers, it is risky to collaborate, because nowadays insect burgers are sold insufficiently and insects have negative experiences to most of the people.

An alternative of sales promotion are product warranties, which are promises by sellers that the product will perform a specific period and that the seller will fix it or refund the money for that specific period (Kotler & Keller, 2012). When consumers bought insect burgers and do not like them, they are able to return the packaging to their supermarket and get their money back. However, consumers have to buy insect burgers themselves. In addition, they also have to behave 'active' while recovering the money by returning the packaging to the supermarket. So, this promotion is probably not effective for insect burgers.

Another alternative of sales promotion is cross-promotion, which targets customers of one product to buy a related product by using promotion (Kotler & Keller, 2012). An example is joint promotion, which can be used to improve their promotional activities by an increase in effectiveness and efficiency. It is only possible when the products are complements, which means that consumers simultaneously use the products to satisfy their needs. When joint promotion is used, resources are pooled by two companies and they create a promotion campaign that is relevant for both brands. For instance, complements

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<sup>1</sup> At the time of writing, the price of two insect burgers in a supermarket is 3.13 euro.

insect burgers and mayonnaise can be promoted together, because this is more effective and efficient due to shared marketing costs and developed business opportunities (Karray & Sique, 2016). However, for a company which produce mayonnaise it is risky to collaborate with a company which produce insect burgers, because nowadays insect burgers are sold insufficiently and insects have negative experiences to most of the people.

Furthermore, advertising can be used to promote insect burgers, which means the promotion of products or services via newspapers, magazines, billboards, radio, television and Internet. Advertising creates more awareness of insect burgers. However, advertising costs a lot of money (Kotler & Keller, 2012). Nowadays, there is an increase in online advertising as marketing tool. Better results can be achieved with the use of persuasion, colours, animations and the focus on specific target groups by for instance keyword selection. However, when more and more advertising techniques are used to attract consumer attention, the result is a decrease in user experience (Jankowski et al., 2016). For insect burgers, advertising is not the optimal promotion strategy, because insect-based food companies make consumers aware of insect burgers, but the consumers are not able to taste them and experience them. To taste insect burgers, they need to take action by themselves, which means they have to buy the product. However, many people are afraid to taste insect burgers, so they will not buy the product themselves.

Three promotion strategies are attractive for the promotion of insect burgers, namely; free sampling, food events and electronic word-of-mouth marketing.

Free sampling is a form of sales promotion. Sales promotion is used to encourage the purchase of products or services. Free sampling offers free products or services to stimulate consumer trial (Kotler & Keller, 2012). Due to free sampling, consumers can experience the taste of insect burgers. Many people are afraid to taste insect burgers, so they will not buy the product themselves. When consumers get free samples of insect burgers, they are more likely to taste insect burgers. In addition, when consumers have already eaten insects, they have significantly more positive attitudes towards insects and are more likely to eat them in the future (Megido et al., 2016).

Furthermore, events and experiences are sponsored activities to create brand-related interactions with consumers (Kotler & Keller, 2012). The number of food events are rising, which reflects an increase in food interests among consumers and the media. Highly valued benefits of food events are tasting fascinating food and taking time off to enjoy good food. Consumers appreciate it when chefs prepare receipts of their new cookbooks. A challenge for the chefs is the balance between tradition and change. Some visitors appreciate tradition food, while some visitors enjoy tasting fascinating (new) foods. So, food events are a good way to introduce insect burgers, because the majority of those food interest consumers are more likely to taste new foods (Meretse et al., 2016).

In addition, word-of-mouth marketing can be used to promote insect burgers, and especially electronic word-of-mouth, because a larger target group can be reached online. Electronic word-of-mouth (eWOM) is the exchange of evaluations and experiences about products or services among consumers who meet, talk and text each other on the Internet. It is more influential than the traditional word-of-mouth, because of its speed, convenience and absence of face-to-face communication (anonymous) and pressure. Because of the large availability of product choices on the Internet, consumers are overwhelmed. Due to this, electronic word-of-mouth has become very crucial in enabling customers to make buying

decisions. A study concluded that 92% of 28,000 Internet users in 56 different countries rely on experiences and recommendations of friends and family, and that 70% of those people rely on online consumer reviewers (Wang et al., 2016). A key component of electronic word-of-mouth is that the majority of the consumers not only rely on what others say, but also on what they observe what others do. This is called the 'bandwagon effect', when other customer's choice is perceived as more reliable than their own private information (Pauwels et al., 2016). With the use of social media, marketers can reach consumers directly. Due to social media, consumers have easily access to product reviews and product information (Lee & Watkins, 2016). Nowadays, many food bloggers are online, which include texts about food culture, cooking, eating, food photography and recipes (Doub et al., 2016). Food bloggers can be used to promote insect burgers, for example by posting receipts of meals including insect burgers, and they can write positive blogs about insect burgers. Besides, many vloggers are online in the society. Vloggers upload videos on Youtube, a popular video-sharing website, about their personal life and about products they use. When they become very successful, they can become Youtube celebrities. Some companies make connections with those popular vloggers and let them promote their products as marketing tool to connect with customers (Lee & Watkins, 2016). This can also be introduced by insect-based food companies. Vloggers can make videos when they prepare meals, including insect burgers, and they can tell something about the insect burgers itself.

Those three promotion strategies lead to certain emotions and attitudes. Those emotions and attitudes provide a certain willingness to pay and intention to eat (figure 1).

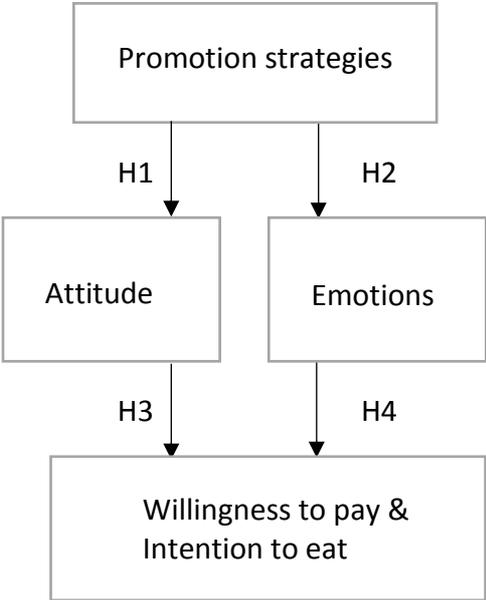


Figure 1. The research model

There are different types of emotions. Disgust is a negative emotion that is a response to bad taste, that lead to nausea, and which discourage eating (Rozin et al., 1999). In the western countries, disgust is linked to the perception of insects (Hamerman, 2016).

Another negative emotion, which is linked to insects, is fear. They do not feel sad, angry or ashamed, but are afraid. Insects have strong associations with risks and uncertainty,

which lead to emotions of fear. When people are angry or sad, they feel that something wrong has been done to them. But angry people become energized and powerful, whereas sad persons become inactive. These two emotions are not related to insects. This also applies to shame, which is caused by a negative action of consumers themselves (Laros & Steenkamp, 2005).

Two positive emotions which can be linked to insects are contentment and happiness. Contentment is passive and low in arousal, while happy people are more positive and more active. Contentment has lower values for organic food than functional and regular food, which means that insects have little positive emotions of contentment, and diminished happiness feelings (Laros & Steenkamp, 2005).

The Theory of Planned Behaviour states that the intention to eat insect burgers is the main precursor of this behaviour. The intention to eat insect burgers is determined by three factors, namely attitude, subjective norm and perceived behavioural control. Attitude refers to the degree to which a person has a positive or negative evaluation towards insect burgers. Subjective norm is related to normative influences, which perceive social pressure to eat or not eat insect burgers. Perceived behavioural control is the individual's perception of their ability to eat insect burgers. It influences intentions to buy insect burgers and directly affects behaviour of consumers. The more favourable the attitude and subjective norm and the greater the perceived behavioural control, the stronger the intention to eat insect burgers (Ajzen, 1991).

The willingness to pay means valuing the benefits of a product. Consumers should be willing to pay more for preferred products. A way to measure the willingness to pay is to ask respondents about their preference for products by valuing the products and then compare those preferences to obtain the highest willingness to pay (Ryan & San Miguel, 2000).

### 3. Hypotheses

The three promotion strategies lead to certain emotions and attitudes. Those emotions and attitudes provide a certain willingness to pay and intention to eat (figure 1).

**H1:** The three promotion strategies result in certain attitudes, which can be positive or negative. The expectation is that the attitude towards insect burgers between the control group and the three promotion strategies differ. Compared to the control group, the promotion strategies will result in more positive attitudes.

Due to free sampling, people will have more positive attitudes towards insect burgers. Many people are afraid to taste insect burgers, so they will not buy the product themselves. However, when the product is shared for free in the supermarket, people will taste it, and the attitude towards insect burgers will change positively.

In addition, food events will give positive attitudes to people. In combination with the positive attitude gained by events, the consumers are more likely to have positive attitudes about insect burgers.

Besides, electronic word-of-mouth makes consumers aware of insect burgers. Consumer purchases frequently rely on experiences from others. If those experiences from others were positive, the attitude towards insect burgers will also be more positive for the consumers.

**H2:** Those three promotion strategies result in the emotions happiness, disgust or fear. The expectation is that the emotions towards insect burgers between the control group and the three promotion strategies differ. Compared to the control group, the promotion strategies will result in more positive emotions, which indicates more happiness and less disgust and fear.

Due to free sampling, people create positive emotions about insect burgers. Many people are afraid to taste insect burgers, so they will not buy the product themselves. However, when the product is shared for free in the supermarket, people will taste it, and the emotions towards insect burgers will change positively.

Furthermore, food events will give positive emotions to people. In combination with the positive emotions gained by events, the consumers are more likely to have positive emotions about insect burgers.

Besides, electronic word-of-mouth makes consumers aware of insect burgers and consumer purchases frequently rely on experiences from others. If those experiences from others were positive, the emotions towards insect burgers will also be more positive.

**H3:** When consumers have a positive attitude towards insect burgers, the willingness to pay becomes higher and the intention to eat insect burgers becomes stronger. If the attitude is negative, the willingness to pay becomes lower and the intention to eat becomes lower. The more positive the attitude, the higher the willingness to pay and the stronger the intention to eat. The more negative the attitude, the lower the willingness to pay and the lower the intention to eat. Compared to the control group, the attitude and the emotions of the three promotion strategies, are more positive. As a result, the expectation is that the willingness to pay and intention to eat differ positively between the control group and the three promotion strategies.

**H4:** When consumers have positive emotions towards insect burgers, the willingness to pay becomes higher and the intention to eat becomes stronger. If consumers have negative emotions, the willingness to pay becomes lower and the intention to eat becomes lower. The more positive the emotions, the higher the willingness to pay and the stronger the intention to eat. The more negative the emotions, the lower the willingness to pay and the lower the intention to eat. Compared to the control group, the emotions of the three promotion strategies, are more positive (more happiness) and less negative (less disgust and fear). As a result, the expectation is that the willingness to pay and intention to eat insect burgers differ positively between the control group and the three promotion strategies.

The expectation is that food event is the optimal promotion strategy. Because of the positive sphere on food events, respondents will experience insect burgers more positively. As a result, respondents of food events have, compared to the control group, the most positive emotions and attitude towards insect burgers, which indicates highest happiness and lowest disgust and fear. Therefore, food event as promotion strategy will also result in the highest willingness to pay and the highest intention to eat insect burgers

#### **4. Research Design**

The research method of this paper was an experimental survey. The survey can be found in Appendix 1. The number of respondents who completed the survey is 178. The survey was written in Dutch and took approximately 5 minutes to complete. To spread the online survey, a combination of convenience and snowball sampling was used. The survey was spread among Facebook and among neighbours, family and friends, which is convenience sampling. Thereafter, family and friends were asked to spread the survey to their own network, which is called snowball sampling. The survey consists of multiple choice questions; a five-point scale is used. For the experiment, there are four groups, one control group and three different promotion strategies, namely free sampling, food events and electronic word-of-mouth. The respondents were equally, randomly divided over the four groups.

##### **4.1 Stimuli**

Each group is introduced with a case. Each case consists of a short story and a picture of the scenario. The control group has no promotion strategy involved. The food sampling strategy is introduced with a promotion team in a supermarket, which share pieces of insect burgers for free. The food event strategy is introduced with an event with food trucks, which sold insect burgers. Finally, the electronic word-of-mouth strategy is introduced with a food blogger, who use insect burgers in their recipes, and a food vlogger, who prepare insect burgers.

##### **4.2 Measurements**

Each participant received questions about one of the four groups. Per group, emotions and attitudes were collected. Attitudes were measured by giving opinions to the statements 'I like to eat insect burgers', 'Eating insect burgers is healthy', 'I feel good after eating insect burgers', 'Insect burgers have a good taste' and 'I am satisfied when insect burgers are on the menu'. Next to those statements, one question was asked, namely 'What is your attitude towards insect burgers?'

Emotions were measured by the questions 'How many happiness, disgust and fear do you feel when you eat insect burgers?'

In addition, the willingness to pay and the intention to eat were measured to study if emotions and attitude actually influence the willingness to pay and the intention to eat. Willingness to pay can be measured by respondents by valuing the insect burgers, which means the amount of money consumers are willing to pay for insect burgers. Intention to eat can be measured by giving an opinion to the statement 'I intend to eat insect burgers at home in next month' and by responding to the questions 'Would you want to eat insect burgers?' and 'If the taste experience of insect burgers is positive, would you buy insect burgers in the future?'.

Next to attitude, emotions, willingness to pay and intention to eat (need-to-know questions), there were also nice-to-know questions. For example, general questions about gender, age, children, education and income. Furthermore, there are some questions about the involvement of health. This is measured by giving opinions about the statements 'Healthy food is important for me.', 'It is important for me to have variation in my diet', and 'I care a lot about health'. In addition, there is a question about the availability of insect burgers, namely: 'What do you think about the availability of insect burgers?'. There is also one statement: 'The availability of insect burgers disturbs me to buy the product'. Finally, there are questions about the place where insect burgers have to be sold, when respondents want to eat insect burgers, where they want to eat insect burgers, what kind of insect-based product they like to have (whole insects or insect burgers which consist of hidden insects (insects not visible), little pieces of insects, which are visible or whole insects which are visible), the place of the insect burgers in the supermarket, if consumers already know the existence of insect burgers, if consumers already have eaten insects and insect burgers, and what the reasons are for the consumption of insect burgers or not to consume it.

#### **4.3 Data Analysis**

Statistical analyses were performed using IBM® SPSS® Statistics version 22. The threshold for significance with each statistical test is a p-value of 0.05.

Cronbach's Alpha was performed to measure the internal reliability of survey questions about attitude, intention to eat, availability and health. Frequencies and crosstabs were used to find the descriptive statistics. Pearson correlations were used to measure the consistency between variables. After correlations, regression analyses are used to predict if emotions and attitude have a significant effect on willingness to pay and intention to eat. In addition, multivariate analysis of variance (MANOVA) were performed to determine whether there are any differences between promotion strategies on attitude and emotions. Pairwise Comparisons (LSD) were used to compare the emotions, attitude, willingness to pay and intention to eat under specific promotion strategies. Also, one-way ANOVA was used to measure the differences between the control group and the promotion strategies on attitude, happiness, disgust, fear, willingness to pay and intention to eat.

## 5. Results

The survey was completed by 178 respondents, forty (22.5%) of them were male and 138 (77.5%) were female. The control group consists of 41 respondents (23.0%), 37 respondents (20.8%) received the food sampling promotion strategy, the food event promotion strategy consists of 57 respondents (32.0 %) and the electronic word-of-mouth promotion strategy consists of 43 respondents (24.2%).

Approximately half of the respondents (46.6%) have already eaten insects. From those people, 92.8% eat them rarely and 7.2% eat them sometimes. In addition, 53.3% of the respondents has knowledge of the existence of insect burgers, mainly via word-of-mouth, via internet, via their study material and some people have seen the product in the supermarket. Besides, 7.9% of the respondents have already eaten insect burgers. From those people, 78.6% eat them rarely and 21.4% eat them sometimes.

The favorite place where respondents would like to eat insect burgers is at home (61.8%), at a food festival/event (53.4%) or in a restaurant (30.3%). They would like to buy insect burgers in the supermarket (88.2%), at a food festival/event (66.9%) or in a restaurant (50.6%). Respondents would like to place insect burgers in the meat shelves (44.9%) or in the vegetarian shelves (46.4%) or an own shelf (5.1%). Besides, respondents like to eat insect burgers for dinner (88.2%), as late night snack (15.2%) or as lunch (9.6%). Finally, 79.8% of the respondents would like to consume insects hidden in a product (79.8%), instead of small pieces of insects in a product (7.9%), whole insects in a product (2.8%) or whole insects (4.5%).

The six items used to measure attitude formed a reliable scale (Cronbach Alpha=0.885). For subsequent analyses the mean of the items was used as attitude. To measure intention, three items formed a reliable scale (Cronbach Alpha=0.792). For subsequent analyses the mean of the items was used as intention. Besides, the two items used to measure the availability of insect burgers, formed an acceptable scale (Cronbach Alpha=0.611). However, the quality of this scale is lower, but acceptable. For subsequent analyses, the mean of the items was used as availability. In addition, the three items used to measure the impact of health, formed a reliable scale (Cronbach Alpha = 0.801). For subsequent analyses, the mean of the items was used to measure the impact of health. However, there is no significant correlation between health and attitude, emotions, willingness to pay and intention to eat. Also, regression analyses showed that the impact of health has no effect on attitude, emotions, willingness to pay and intention to eat; health is not significant. Moreover, ANOVA's showed not a significant effect of demographic factors on emotions, attitude, willingness to pay and intention to eat.

Pearson correlations showed that attitude, happiness, disgust, fear, intention to eat and willingness to pay are significant (table 1).

Parameters	Happiness	Disgust	Fear	Intention	WTP
<b>Attitude</b>	-0.786, p=0.000	-0.779, p=0.000	-0.563, p=0.000	-0.829, p=0.000	0.379, p=0.00
<b>Happiness</b>		0.674, p=0.000	0.498, p=0.000	0.735, p=0.000	-0.342, p=0.000
<b>Disgust</b>			0.704, p=0.000	0.695, p=0.000	-0.338, p=0.00
<b>Fear</b>				0.493, p=0.000	-0.190. p=0.011
<b>Intention</b>					-0.435, p=0.000

A MANOVA showed a significant effect of promotion strategies on both attitude and emotions (happiness, disgust and fear); Roy's Largest Root= 0.074,  $F(4,173)=3.185$ ,  $p=0.015$ . So, there is a difference between the control group and the other three promotion strategies on attitude and emotions, which means that attitude and emotions can also be measured separately.

### 5.1 Attitude

An ANOVA showed a significant effect of promotion strategies on attitude;  $F(3,174)=3.196$ ,  $p=0.025$ . Pairwise comparisons (LSD) to compare the four situations towards attitude show that electronic word-of-mouth and food event have a significant higher attitude compared to the control group, while this effect for free sampling was not significant (table 2).

	Control	Free Sampling	Food event	eWOM	F test
<b>Attitude</b>	2.73 (0.115) <sup>a</sup>	3.06 (0.121) <sup>ab</sup>	3.10 (0.10) <sup>b</sup>	3.202 (0.113) <sup>b</sup>	$F(3,174)=3.196$ , $p=0.025$ , $\eta^2=0.052$

Note: values sharing the same superscript character are not significantly different at  $p<0.05$  (pairwise comparisons LSD).

### 5.2 Emotions

A MANOVA showed a significant effect of the promotion strategies on the three emotions (happiness, disgust and fear); Roy's Largest Root= 0.069,  $F(3,174)=4.027$ ,  $p<0.01$ ,  $\eta^2=0.065$ . Subsequent ANOVA's on the individual emotions, showed that differences in happiness are not significant ( $F(3,174)=2.051$ ,  $p=0.108$ ). Besides, differences in disgust ( $F(3,174)=3.129$ ,  $p=0.027$ ) and fear ( $F(3,174)=2.695$ ,  $p=0.048$ ) are significant. Table 3 shows Pairwise comparisons (LSD) that compare the four situations (control group and the three promotion

strategies) towards emotions. It shows that electronic word-of-mouth and free sampling significantly lead to lower disgust compared to the control group, while this effect for food event was not significant. Besides, electronic word-of-mouth and free sampling significantly result in lower fear compared to the control group, while this effect for food event was not significant. The larger the mean of disgust and fear, the more disgust and fear feel respondents towards insect burgers. In contrast, the larger the mean of happiness, respondents are less happy towards insect burgers. The overall difference of happiness is not significant ( $p=0.108$ ). However, between the control group and food event there is a significant difference;  $p=0.022$ .

Emotions	Control	Free Sampling	Food event	eWOM	F test
Happiness <sup>1</sup>	3.98(0.152) <sup>a</sup>	3.60 (0.161) <sup>ab</sup>	3.49 (0.124) <sup>b</sup>	3.65 (0.149) <sup>ab</sup>	F(3,174)=2.051, $p=0.108$
Disgust	3.12 (1.269) <sup>a</sup>	2.42(1.200) <sup>b</sup>	2.79(1.130) <sup>ab</sup>	2.49(1.070) <sup>b</sup>	F(3,174)=3.326, $p=0.021$ , $\eta^2=0.051$
Fear	2.66 (1.175) <sup>a</sup>	2.05 (0.998) <sup>b</sup>	2.40 (1.015) <sup>ab</sup>	2.14 (1.060) <sup>b</sup>	F(3,174), $p=0.046$ , $\eta^2=0.044$

<sup>1</sup> Overall happiness is not significant.  
 Note: values sharing the same superscript character are not significantly different at  $p<0.05$  (pairwise comparisons LSD).

### 5.3 Willingness to pay and Intention to eat

A stepwise regression analysis showed a significant effect of attitude on willingness to pay;  $F(1,176)=33.006$ ,  $p=0.000$ . Attitude explains for 15.8% the variability of the willingness to pay ( $R$  square = 0.158). Subsequent, all emotions have not a significant effect on willingness to pay (happiness:  $p = 0.532$ , disgust:  $p = 0.302$ , fear:  $p = 0.273$ ).

In addition, a stepwise regression analysis showed also a significant effect of attitude and happiness on intention to eat;  $F(4,173)=105.349$ ,  $p=0.000$ . Attitude and happiness explain for 70.5% the variability of intention to eat ( $R$  square = 0.705). Subsequent, the other emotions (disgust and fear) have not a significant effect on intention;  $p=0.165$  and  $p=0.728$ .

A MANOVA showed not a significant effect of the promotion strategies on willingness to pay and intention to eat; Roy's Largest Root=0.039,  $F(3, 174)=2.262$ ,  $p=0.083$ ,  $\eta^2=0.038$ . For willingness to pay:  $F(3, 174)=1.812$ ,  $p=0.147$ , and for intention to eat:  $F(3,174)=1.560$ ,  $p=0.201$ . Multiple comparisons (LSD) to compare the promotion strategies towards willingness to pay and intention to eat show that food event is significant towards willingness to pay and intention to eat;  $p=0.025$  and  $p=0.048$  (table 4). The lower the mean of intention to eat, the stronger the intention to eat insect burgers is. Food event as promotion strategy lead to the highest willingness to pay (1.53 euro) and the strongest intention to eat (2.68).

Table 4: Means (sd) of the willingness to pay and intention to eat for the different

campaigns (in €)					
	Control	Free sampling	Food event	eWOM	F test
<b>WTP<sup>1</sup></b>	1.23 (0.63) <sup>a</sup>	1.34 (0.61) <sup>ab</sup>	1.53 (0.61) <sup>b</sup>	1.41 (0.71) <sup>ab</sup>	F(3,174)=1.812, p=0.147
<b>Intention<sup>2</sup></b>	3.07 (1.01) <sup>a</sup>	2.80 (0.95) <sup>ab</sup>	2.68 (0.87) <sup>b</sup>	2.69 (1.01) <sup>ab</sup>	F(3,174)=1.560, p=0.201
<sup>1</sup> Overall willingness to pay is not significant <sup>2</sup> Overall intention to eat is not significant Note: values sharing the same superscript character are not significantly different at p<0.05 (multiple comparisons LSD).					

The main reasons for trying to eat insect burgers are the curiosity of respondents (66.0%), the environmental friendly aspect of insects (46.2%) and because insect burgers are healthy (25.5%). However, the promotion strategies have no significant effect on those reasons; Pearson Chi-Square=11.966 df=12, p=0.448.

The main reasons for not trying to eat insect burgers are the insects, some respondents will never eat them (50.8%), they do not like the taste of insect burgers/ think that insect burgers have a bad taste (37.7%) and because respondents have fear towards insects (34.4%). However, the promotion strategies have no significant effect on those reasons; Pearson Chi-Square=11.966, df=12, p=0.448.

A regression analysis showed a significant effect of availability of insect burgers on the intention to eat; F(1,176)=77.678, p=0.000. The availability explains for 30.6% the variability of intention to eat (R square=0.306). Respondents found the availability of insect burgers insufficient (60.7%) and 45.5% of the respondents is disturbed in buying the product through the availability of insect burgers.

## 6. Discussion

This study was about different promotion strategies that were applied to insect burgers. The focus of many scientists was on the insects itself, but not on the promotion of insects, while nowadays insect burgers are sold less. Some studies focussed on the promotion of meat reduction (De Boer, et al., 2014), but studies about the promotion of insects-based products does not exist yet.

From the survey, a profile of a consumer who wants to consume insects is made. The consumer would like to eat insects hidden in a product, which agrees with another study (Elzerman et al., 2011). Therefore, insect burgers should look like meat burgers, because this increases familiarity for insect burgers (Megido et al., 2016). The three main reasons for trying insects are curiosity, the animal- and environmental friendly aspect of insects and because insects are healthy. He/she would like to eat insects at home, at food events/festivals and in restaurants. Therefore, insect burgers should be sold in supermarkets, at food events/festivals and in restaurants. The consumer would like to eat insect burgers for dinner. Finally, he/she has doubts about the place of the insect burgers in the supermarket; in meat shelves or in vegetarian shelves.

Different promotion strategies have an effect on attitude. Electronic word-of-mouth and food event have a significant higher attitude compared to the control group, while this effect for free sampling was not significant. If the promotion strategy is free sampling, consumers

have to imagine from a short text and a picture that insect burgers were shared for free. Further research is necessary to find effects for free sampling. When consumers can consume free pieces of insect burgers in reality, this will have stronger effects which result in a more positive attitude. Besides, the frequency of exposure and experimental tasting of insects should be increased. Consumers have significantly a more positive attitude towards insects and are more likely to eat them in the future, when they have already eaten insects (Megido et al., 2016).

Electronic word-of-mouth result in a more positive attitude towards insect burgers, because many people rely on experiences and recommendations of friends and family and on online consumer reviews (Wang et al., 2016). According to the bandwagon effect, consumers rely on what others say and on what they observe what others do. The customer's choice is perceived as more reliable than their own private information (Pauwels et al., 2016). Electronic word-of-mouth respondents rely on the activities of the food blogger and vlogger. When consumers see other people consuming insect burgers, this result in a more positive attitude towards insect burgers.

Besides, there is an increase in food interests among consumers and the media. At food events/festivals, people are taking time off to enjoy good tasting fascinating (new) foods (Meretse et al., 2016). Therefore, food events are an effective way to introduce insect burgers, because the majority of those food interest consumers are more likely to taste new foods. This result in a more positive attitude towards insect burgers, which is in line with the hypothesis.

In addition, different promotion strategies have an effect on emotions. Different promotion strategies have a significant effect on disgust and fear. In the Western countries, disgust and fear are emotions linked to insects (Hamerman, 2016). However, there is no significant effect from promotion strategies on happiness. Electronic word-of-mouth and free sampling significantly lead to lower disgust compared to the control group, while this effect for food event was not significant. Besides, electronic word-of-mouth and free sampling significantly result in lower fear compared to the control group, while this effect for food event was not significant.

Electronic word-of-mouth result in lower fear and disgust towards insect burgers, because many people rely on experiences and recommendations of friends and family and on online consumer reviews (Wang et al., 2016). According to the bandwagon effect, consumers rely on what others say and on what they observe what others do. The customer's choice is perceived as more reliable than their own private information (Pauwels et al., 2016). Electronic word-of-mouth respondents rely on the activities of the food blogger and vlogger. When consumers see other people consuming insect burgers, fear and disgust towards insect burgers decreases.

Free sampling significantly result in lower disgust and lower fear towards insect burgers compared to the control group. The free sampling respondents had to imagine that they got free pieces of baked insect burgers. Due to free sampling, consumers can experience the taste of insect burgers. Many people are afraid to taste insect burgers, so they will not buy the product themselves. When consumers got free samples of insect burgers, they are more likely to taste insect burgers, which result in less disgust and fear.

In line with the hypothesis, food events result in more happiness towards insect burgers compared to the control group. On food events, people are happy, enthusiastic and the sphere is enjoyable. Many people that have ever been before on a food event/festival,

link those positive feelings to the scenario from this case. This positive mood has an impact on the taste experience of people. When people are on food events they are more likely to taste new food and food they never have eaten before. On the other hand, in contrast with the hypothesis, food events have compared to the control group no significant effect on disgust and fear towards insect burgers. An explanation for this is that this study consists of scenarios. Respondents have to imagine that they are on a food event, which will have a relative small effect on disgust and fear. A solution for this is future research with real life cases, where people have to go to food events and afterwards they have to complete the survey about their experiences from insect burgers.

The hypothesis that both emotions and attitude influence the willingness to pay, is not in line with this study. The survey shows that attitude has a significant effect on willingness to pay, while emotions have not a significant effect on willingness to pay. Emotions are not important when valuing insect burgers. This is in contrast with the hypothesis. It may depend on the questions in the survey or because people feel no strong emotions, because the four cases are scenarios instead of real cases. The effect from emotions on willingness to pay will become stronger when it became real life cases.

The willingness to pay depends on the preference and the value of the benefits of insect burgers, which is valued by the respondents (Ryan & San Miguel, 2000). The hypothesis is that when the attitude of respondents is significantly more positive, the willingness to pay will be higher. The promotion strategies which gave a more positive attitude towards insect burgers were food event and electronic word-of-mouth. In line with this hypothesis, the willingness to pay for insect burgers differs the most from the control group when food events are used as promotion strategy.

The current retail price for insect burgers is 1.57 euro. Due to electronic word-of-mouth, the willingness to pay for insect burgers is 1.41 euro. This is higher compared to the control group (1.23 euro), because respondents have significantly a more positive attitude towards insect burgers than the control group.

In addition, food event is the only promotion strategy with a direct significant effect on willingness to pay. Due to the food event, the willingness to pay for insect burgers is highest: 1.53 euro. Respondents are willing to pay more for an insect burger when they have a positive attitude towards insect burgers. However, on food events people buy a baked insect burger. People are willing to pay more for prepared food. It is possible that some respondents valued the willingness to pay for a baked insect burger, although this question was clarified with willingness to pay for an insect burgers in a supermarket.

However, for all promotion strategies, the willingness to pay for one insect burger is lower than the retail price (1.57 euro). When the willingness to pay is lower than the real retail price, consumers are not buying insect burgers. Therefore, the current results suggest that insect burgers should be sold at prices about 15% (to 20%) below the current retail price.

The data of willingness to pay is not normally distributed, because some respondents do not want to pay any money for insect burgers. Those respondents are rather in the sample, because all respondents have an opinion that have to be considered.

The last hypothesis is that emotions and attitude will influence the intention to eat. Due to more positive emotions, less negative emotions and a positive attitude, the intention to eat insect burgers will become stronger. However, this study shows that attitude and happiness

have a significant effect on intention to eat, while disgust and fear have not a significant effect on intention to eat insect burgers. This is in contrast with the hypothesis. It may depend on the questions in the survey or because people are less encouraged to feel certain emotions, because the four cases are scenarios instead of real cases less. The effect from disgust and fear on intention to eat will become stronger when it became real life cases.

Due to the significant effect from food event on both attitude and happiness, this promotion strategy result in the highest intention to eat insect burgers. As a result, food event is the only promotion strategy with a direct significant effect on the intention to eat insect burgers. A food event creates a positive mood and makes people happy, which result in more positive experiences. People will create a positive attitude towards insect burgers and become happy of insect burgers. When people are positive towards food and when people become happy of food, they are more likely to eat it in the future. Therefore, people are more likely to eat insect burgers in the future. Promotion strategies with no significant effect on attitude and emotions would not lead to consuming insect burgers.

The main reasons for trying to eat insect burgers are the curiosity of respondents, the animal- and environmental friendly aspect and because insects are healthy. However, those reasons are not significant. For other studies, these aspects are also the main motivations for eating insects (House, 2016; Verbeke, 2015). A study showed that consumers are more focused on health benefits than on the environmental impact of insects. Health is a strong factor that influenced the food choice of consumers (Verbeke, 2015). However, there was no significant effect from health on attitude, emotions, willingness to pay and intention to eat. Almost all respondents found healthy important, so this result not in significant effects.

On the other hand, the main reasons for not trying to eat insect burgers are the addition of insects. Some respondents will never eat them, some respondents have fear for insects and some respondents do not like the taste of insect burgers/ think that insect burgers have a bad taste. However, those reasons are not significant.

The availability of the insect burgers influences the intention to eat. When it is difficult to buy insect burgers because of the availability, the intention to eat insect burgers become weaker. Approximately half of the respondents found the availability of insect burgers insufficient and is disturbed in buying the product through the availability of insect burgers.

### **6.1 Limitations and Future Research**

The research method of this paper was an experimental survey. The survey came online on January 2, 2017, which means a possibility of the influence of New Year's resolutions (eat healthy in 2017) on the responses. The survey was spread among friends, family, neighbors and on Facebook; on my own Facebook page and on 'Wageningen Student Plaza'. On Wageningen Student Plaza, the willing respondents were probably more interested and more positive towards insects as food than the general Dutch population. In Wageningen, it is more likely that students and other people came in contact with insects. Moreover, students in Wageningen are generally more interested in food and agriculture. This will result in a more positive attitude, emotions and a stronger effect on willingness to pay for insect burgers and intention to eat insect burgers compared to the general population. Despite the effect of promotion strategies on attitude, emotions, willingness to pay and intention to eat, more future research is necessary about the promotion of insect burgers. If the research will be conducted with real life scenarios, the effects of this study will be much

stronger. This survey consists of four scenarios (control group, free sampling, food event and eWOM). However, the respondents have to imagine these situations, they are not real. This will result in fewer effects. Further research required promotion strategies that should be performed in real life. When consumers can taste real free samples, be on food events and scroll on different pages with food bloggers and food vloggers who promote insect burgers, they will probably experience insect burgers more positive. It will result in a more positive attitude, more happiness, lower disgust and fear, which result in a higher willingness to pay and a stronger intention to eat insect burgers. So, these real-life situations will have stronger effects, which means more in line with the hypotheses.

Besides, future research could be done on a larger study population to have stronger effects on willingness to pay and intention to eat. This result in a better understanding of the optimal promotion strategy towards insect burgers.

In addition, it is possible that respondents gave social desirable answers. A solution for this is future research that investigates afterwards the consumer behavior of the respondents towards insect burgers. In this way, respondents are checked if they behave according to the answers they gave in the survey.

## **6.2 Conclusions**

The present study provided new insights into the role of promotion strategies on attitude, emotions, willingness to pay and intention to eat. The promotion strategies have different effects on attitude and emotions (disgust, fear and happiness). Compared to the control group, the promotion strategies, food event and eWOM result in a more positive attitude. Besides, eWOM and free sampling lead to lower disgust and fear, while food event result in more happiness. In addition, a positive attitude result in a higher willingness to pay. On the other hand, attitude and happiness have a positive effect on the intention to eat. Food event have both a higher attitude and more happiness compared to the control group. It is the only promotion strategy which have a direct effect on willingness to pay and intention to eat. As a result, food event is the optimal promotion strategy. The insect burger should be sold on food events.

Furthermore, future research is recommended with real-life cases and checking consumer behaviour afterwards to found stronger effects on attitude, emotions, willingness to pay and intention to eat.

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## **Appendix 1: Survey**

Bedankt dat u mee wilt doen aan het onderzoek van Bedrijfs- en Consumentenwetenschappen studente Esther Boekhorst in het kader van haar afstudeerproject aan Wageningen University. Dit onderzoek heeft betrekking op insectenburgers. Ook als u niet van insecten houdt, kunt u meedoen aan deze enquête.

Het invullen van deze enquête duurt ongeveer 5 minuten. Uw antwoorden blijven geheel anoniem en uw deelname is geheel vrijwillig. Let u er wel op dat als u eenmaal een pagina heeft afgesloten, u niet meer terug kunt naar de vorige pagina.

Nogmaals hartelijk dank voor uw deelname. Mocht u vragen hebben, dan kunt u die stellen door een e-mail te sturen naar [esther.boekhorst@wur.nl](mailto:esther.boekhorst@wur.nl).

## **Intro**

De laatste tijd is er veel aandacht voor het gebruik van insecten in voedingsmiddelen. Insecten kunnen een vervanging zijn van vlees. Net als vlees hebben insecten veel proteïnen/eiwitten. Insectenburgers lijken qua uiterlijk op hamburgers of groenteburgers, alleen zijn er insecten in verwerkt.



Als de respondent op 'verder' klikt, dan krijgt die persoon één van de vier onderstaande situaties te zien.

## **Situatie 1: CONTROLE GROEP (geen promotie)**



Stelt u de volgende situatie voor: U loopt in de supermarkt en komt insectenburgers tegen.

### **Zou u een insectenburger proberen?**

- Zeker wel
- Waarschijnlijk wel
- Neutraal
- Waarschijnlijk niet
- Zeker niet

### **Als gekozen is: zeker wel, waarschijnlijk wel: Welke reden heeft u voor het proberen van insectenburgers?**

- Het is gezond
- De smaak is/lijkt me lekker
- Het geeft variatie aan mijn dieet
- Ik ben nieuwsgierig naar het product.
- De prijs vind ik aantrekkelijk (1.57 euro per stuk)
- Het is diervriendelijker en beter voor het milieu
- Anders...

### **Als gekozen is: waarschijnlijk niet, zeker niet: Welke reden heeft u voor het niet proberen van insectenburgers?**

- De smaak is/lijkt me niet lekker
- Ik vind insecten eng
- Ik vind de insectenburgers er niet lekker uit zien
- Ik eet geen insecten
- De prijs vind ik te hoog (1.57 euro per stuk)
- Anders...

### **Hoeveel bent u bereid te betalen voor één insectenburger? De prijs van één insectenburger in de supermarkt is 1.57 euro.**

Schaal: 0 – 3 euro

## **Situatie 2: Food sampling**

Stelt u de volgende situatie voor: U loopt rond in een supermarkt. Er staat een promotiemedewerker, die insectenburgers aan het bereiden is. Vervolgens wordt er aan u een stukje insectenburger aangeboden om te proeven.



### **Zou u een insectenburger proberen?**

- Zeker wel
- Waarschijnlijk wel
- Neutraal
- Waarschijnlijk niet
- Zeker niet

### **Als gekozen is: zeker wel, waarschijnlijk wel: Welke redenen heeft u voor het proberen van insectenburgers?**

- Het is gezond
- De smaak is/likt me lekker
- Het geeft variatie aan mijn dieet
- Ik ben nieuwsgierig naar het product.
- De prijs vind ik aantrekkelijk (1.57 euro)
- Het is diervriendelijk en milieuvriendelijk
- Anders...

### **Als gekozen is: waarschijnlijk niet, zeker niet: Welke redenen heeft u voor het niet proberen van insectenburgers?**

- De smaak is/likt me niet lekker
- Ik vind insecten eng
- Ik vind de insectenburgers er niet lekker uit zien
- Ik eet geen insecten
- De prijs vind ik te hoog (1.57 euro per stuk)
- Anders...

### **Hoeveel bent u bereid te betalen voor één insectenburger? De prijs van één insectenburger in de supermarkt is 1.57 euro.**

Schaal: 0 – 3 euro

### **Situatie 3: Food events**

Stelt u de volgende situatie voor: U bent op een food event, met allerlei verschillende foodtrucks. Deze dag draait om het eten van lekkere producten, en misschien wel om nieuwe producten te leren kennen. Een van de foodtrucks verkoopt insectenburgers met een broodje voor een schappelijke prijs.



#### **Zou u een insectenburger proberen?**

- Zeker wel
- Waarschijnlijk wel
- Neutraal
- Waarschijnlijk niet
- Zeker niet

#### **Als gekozen is: zeker wel, waarschijnlijk wel: Welke reden heeft u voor het proberen van insectenburgers?**

- Het is gezond
- De smaak is/likt me lekker
- Het geeft variatie aan mijn dieet
- Ik ben nieuwsgierig naar het product.
- De prijs vind ik aantrekkelijk (1.57 euro per stuk)
- Het is diervriendelijker en beter voor het milieu
- Anders...

#### **Als gekozen is: waarschijnlijk niet, zeker niet: Welke reden heeft u voor het niet proberen van insectenburgers?**

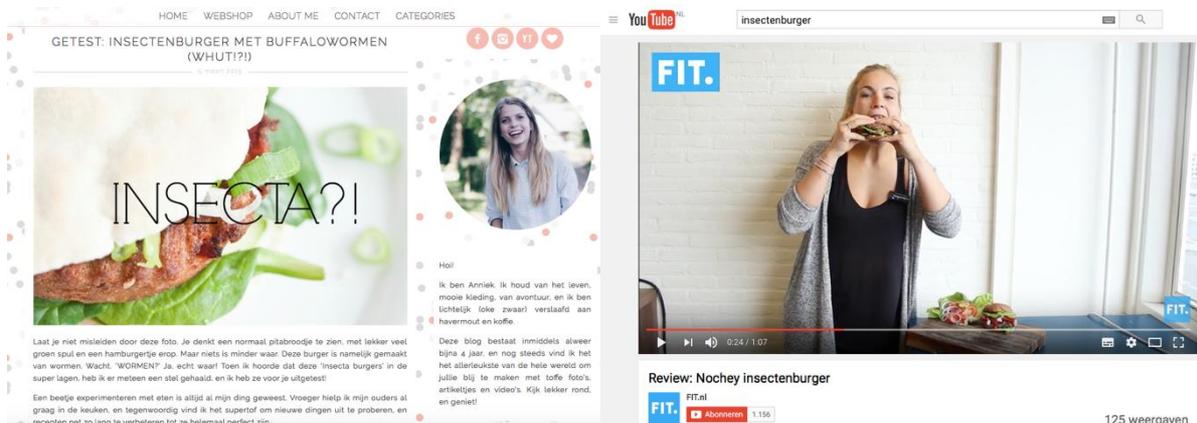
- De smaak is/likt me niet lekker
- Ik vind insecten eng
- Ik vind de insectenburgers er niet lekker uit zien
- Ik eet geen insecten
- De prijs vind ik te hoog (1.57 euro per stuk)
- Anders...

#### **Hoeveel bent u bereid te betalen voor één insectenburger? De prijs van één insectenburger in de supermarkt is 1.57 euro.**

Schaalmeter 0 – 3 euro

#### **Situatie 4: Electronic word-of-mouth**

Stelt u de volgende situatie voor: U bent op social media aan het rondsnuffelen en u komt verschillende foodbloggers tegen die recepten voorstellen met insectenburgers. Ook komt u vloggers tegen die insectenburgers bereiden en promoten.



#### **Zou u een insectenburger proberen?**

- Zeker wel
- Waarschijnlijk wel
- Neutraal
- Waarschijnlijk niet
- Zeker niet

#### **Als gekozen is: zeker wel, waarschijnlijk wel: Welke reden heeft u voor het proberen van insectenburgers?**

- Het is gezond
- De smaak is/lijkt me lekker
- Het geeft variatie aan mijn dieet
- Ik ben nieuwsgierig naar het product.
- De prijs vind ik aantrekkelijk (1.57 euro per stuk)
- Het is diervriendelijker en beter voor het milieu
- Anders...

#### **Als gekozen is: waarschijnlijk niet, zeker niet: Welke reden heeft u voor het niet proberen van insectenburgers?**

- De smaak is/lijkt me niet lekker
- Ik vind insecten eng
- Ik vind de insectenburgers er niet lekker uit zien
- Ik eet geen insecten
- De prijs vind ik te hoog (1.57 euro per stuk)
- Anders...

#### **Hoeveel bent u bereid te betalen voor één insectenburger? De prijs van één insectenburger in de supermarkt is 1.57 euro.**

Schaalmeter 0 - 5

**Voor alle vier de cases:**

**Stel de insectenburger zou u in de smaak vallen, zou u dan een insectenburger kopen in de toekomst?**

- Zeker wel
- Waarschijnlijk wel
- Neutraal
- Waarschijnlijk niet
- Zeker niet

**Als gekozen is: zeker wel, waarschijnlijk wel: Wat zijn redenen voor u om insectenburgers te eten?**

- Het is gezond
- De smaak is/likt me lekker
- Het geeft variatie aan mijn dieet
- Ik ben nieuwsgierig naar het product
- De prijs vind ik aantrekkelijk (1.57 euro)
- Het is diervriendelijker en beter voor het milieu
- Anders...

**Als gekozen is: waarschijnlijk niet, zeker niet: Wat is de reden om geen insectenburger te kopen in de toekomst?**

- Ik weet niet wanneer ik het moet eten
- Ik weet niet hoe ik het moet eten
- De prijs vind ik te hoog (1.57 euro)
- Huisgenoten/familieleden lusten het niet
- Ik wil mijn eetgewoonte niet veranderen
- Ik eet graag traditioneel
- Anders: ...

Onderstaande stelling gaat over uw intentie om insectenburgers te kopen.

**Ik ben van plan om binnen een maand insectenburgers te eten.**

- Helemaal mee oneens/oneens/neutraal/eens/helemaal mee eens

Onderstaande vragen gaan over uw emoties ten opzichte van insectenburgers.

**Hoe blij wordt u van een insectenburger?**

Heel weinig, weinig, gemiddeld, veel, heel veel

**Hoeveel walging voelt u bij een insectenburger?**

Heel weinig, weinig, gemiddeld, veel, heel veel

**Hoeveel angst voelt u bij een insectenburger?**

Heel weinig, weinig, gemiddeld, veel, heel veel

Onderstaande vraag gaat over uw houding ten opzichte van insectenburgers.

**Wat is uw houding ten opzichte van insectenburgers?**

- Heel erg negatief / negatief / neutraal / positief / heel erg positief

Onderstaande stellingen gaan over uw houding ten aanzien van insectenburgers

- **Ik zou graag insectenburgers eten.**
  - o Helemaal mee oneens/oneens/neutral/eens/helemaal mee eens
- **Het eten van insectenburgers is gezond.**
  - o Helemaal mee oneens/oneens/neutral/eens/helemaal mee eens
- **Na het eten van insectenburgers zou ik me fijn voelen.**
  - o Helemaal mee oneens/oneens/neutral/eens/helemaal mee eens
- **Insectenburgers hebben een lekkere smaak/liken me een lekkere smaak te hebben.**
  - o Helemaal mee oneens/oneens/neutral/eens/helemaal mee eens
- **Als insectenburgers op het menu staan, zou ik blij zijn.**
  - o Helemaal mee oneens/oneens/neutral/eens/helemaal mee eens

**Wat vindt u van de beschikbaarheid van insectenburgers? (Daarmee wordt bedoeld; de mogelijkheid om insectenburgers te kopen).**

Onvoldoende/matig/ neutral/ voldoende/ goed

Onderstaande stelling gaat over het aspect beschikbaarheid:

**De beschikbaarheid van insectenburgers hindert mij in het kopen van het product.**

- o Helemaal mee oneens/oneens/neutral/eens/helemaal mee eens

Onderstaande stellingen gaan over het aspect gezondheid.

- **Gezond voedsel is belangrijk voor me.**
  - o Helemaal mee oneens/oneens/neutral/eens/helemaal mee eens
- **Ik vind het belangrijk om voldoende variatie in mijn dieet te hebben.**
  - o Helemaal mee oneens/oneens/neutral/eens/helemaal mee eens
- **Ik geef veel om mijn gezondheid.**
  - o Helemaal mee oneens/oneens/neutral/eens/helemaal mee eens

**De plaats waar ik het liefst insectenburgers zou eten is (Meerdere antwoorden zijn mogelijk):**

- Thuis
- In een restaurant
- Op een Food event / festival
- In een cafetaria
- Anders:....

**Op welke plaats zou u willen hebben dat insectenburgers verkocht worden? (Meerdere antwoorden zijn mogelijk):**

- In supermarkten
- In restaurants
- Op food events / festivals
- In cafetaria's.
- Anders...

**Wanneer zou u het liefst een insectenburger willen eten? (Meerdere antwoorden zijn mogelijk):**

- Als ontbijt
- Als ochtendtussendoortje
- Als middageten
- Als middagtussendoortje
- Als avondeten
- Als avondsnaak

**Als ik producten eet met insecten, dan heb ik ze het liefst;**

Insecten verwerkt in een product, waarbij de insecten niet meer zichtbaar zijn.

Insecten verwerkt in een product, waarbij kleine stukjes insect zichtbaar zijn.

Insecten verwerkt in een product, waarbij de in zijn geheel in het product zitten.

Insecten in zijn geheel.

Anders: ...

**Op welke plaats zou u de insectenburgers plaatsen in het schap van de supermarkt?**

Bij het vlees

Bij de vegetarische producten

Bij de vis

Anders: ...

**Heeft u weleens insecten op of voedsel met insecten erin verwerkt?**

Ja

Nee

→ **Zo ja, Hoe vaak eet u insecten?**

Zelden, af en toe, regelmatig, vaak

**Wist u dat er insectenburgers op de markt zijn?**

Ja

Nee

→ **Zo ja, hoe bent u hiervan op de hoogte?**

Via Familie/vrienden

Via TV reclames

Via Social Media

Via Internet

Via folders

Anders.....

**Heeft u weleens insectenburgers op?**

Ja

Nee

→ **Zo ja, Hoe vaak eet u insectenburgers?**

Zelden, af en toe, regelmatig, vaak

**Algemeen:**

**Wat is uw geslacht?**

Man  
Vrouw

**Wat is uw leeftijd?**

Schaal : 15 - 100

**Hoeveel kinderen wonen er in uw huishouden?**

0  
1  
2  
3-5  
>5

**Wat is uw hoogst afgeronde opleiding?**

Geen of Lager onderwijs  
VMBO  
HAVO  
VWO  
MBO  
HBO  
Universiteit

**Wat is de hoogte van het jaarlijks inkomen van uw huishouden?**

Lager dan 30.000 euro  
30.000 – 60.000 euro  
Hoger dan 60.000 euro