
THE DRIVERS OF PURCHASE INTENTION FOR MEAL-KITS OFFERINGS

Thesis



Radboud Universiteit Nijmegen

Name: Thijs Boone
Student number: s1029861

Date: 15-06-2020
Supervisor: Marleen Hermans
2nd examiner: Nanne Migchels

Abstract

From an academic point of view, the subject meal-kits has not been studied much in the literature. Most of the current research focuses on convenience food, without the inclusion of meal-kits. Since the rapidly growing success of meal-kits and the arrival of new kinds of meal-kits, the question arises whether or not meal-kits can be seen as convenience food (Hertz, 2017; Jackson, 2015). This thesis attempts to answer for the gap in the literature aimed at the purchase intention of meal-kits. This is done by applying and comparing the most important drivers for the consumption of convenience food by Brunner (2010) to meal-kits offerings. An online experiment was conducted among 114 respondents, to determine the effect of consumer characteristics (age and health awareness) and marketing actions (price and packaging) on the purchase intention of meal-kits. The results show that consumer characteristics and marketing actions do not significantly influence the purchase intention of meal-kits. However, it can be concluded that the purchase intention of fresh packages is on average higher than the purchase intention of regular meal-kits. These findings give reason to believe that the predictors of purchase intention of meal-kits are substantially different as opposed to other forms of food.

Keywords: purchase intention, meal-kits, health awareness, price, fresh package.

Table of contents

1. Introduction	5
1.1 Outline	8
2. Literature review	9
2.1 Convenience food	9
2.2 Meal-kit characteristics	10
2.3 Consumer characteristics	11
2.3.1 Age	11
2.3.2 Health Awareness	11
2.4 Marketing actions	12
2.4.1 Pricing	12
2.4.2 Packaging	13
2.5 Conceptual model	14
3. Methodology	19
3.1 Research design	19
3.2 Scenarios	21
3.3 Variable operationalization	21
3.4 Metrics	24
3.5 Research ethics	25
4. Results	26
4.1 Descriptive statistics	26
4.2 Assumptions	28
4.3 Results	30
4.4 Robustness checks	35
5. Discussion and conclusion	36
5.1 Academic implications	36
5.2 Managerial implications	39
5.3 Limitations and future research	41
References	44
Appendix	51
Appendix A: Scenarios	51
Appendix B: Survey questions	56
Appendix C: Prices fresh packages & regular meal-kits	57

Appendix D: Assumptions and correlations	58
Appendix E: Reliability analysis	61
Appendix F: Skewness and kurtosis	62
Appendix G: Results regression analysis transformed variables.....	63

1. Introduction

In order to adapt to the continuously changing customer demand, the number of innovations over the past years has been accelerating within the retail industry (Inman, 2017). The arrival of new technology led to different technological innovations such as big data collection, technologies to assist consumers in decision making, and tailor-made merchandise offerings (Grewal, 2017). The upcoming need of consumers for saving time and effort when preparing meals, resulted in another big trend in the retail business: convenience food.

Around 85% of the consumers decide what to eat for dinner on the same day that meal occurs (Petrak, 2019). This is one of the reasons why the amount of convenient meal solution choices, provided for the consumer, increased in the past few years. The amount of provided carry-out food in 2019 grew to 81% versus 69% in 2017, the delivery food grew to approximately 72% versus 60% in 2017, and the amount of prepared food provided by groceries was 77% in 2019 versus 64% (Petrak, 2019). These numbers provide evidence for the continuously growing demand for convenience food. This eventually led to a more recent form of convenience food, meal-kits.

Meal-kits are boxes containing premeasured fresh food items along with a particular recipe that needs to be followed in order to prepare the meal (Hertz, 2017). This solution can be considered convenient because it helps consumers save time in the amount of planning that is involved when preparing a meal. The reason for this is that consumers do not have to search for recipes or have to determine the number of ingredients needed for a meal. Another benefit is the reduction in shopping time. Consumers can simply order the meal-kits online via monthly subscriptions and get them delivered at home (Hertz, 2017). When compared to other forms of convenience food (such as frozen ready-to-eat meals), the meal-kits stimulate the consumer to cook the meal themselves from scratch. This, along with the usage of fresh ingredients, are the main reasons why meal-kits are generally perceived as more healthy than other forms of convenience food (Hertz, 2017).

The meal-kits industry has been growing over the years. An example of a provider of these meal-kits is HelloFresh. In 2017, HelloFresh received approximately 18.9 million meal-kit orders worldwide. The number of orders increased even further in 2018 to around 27 million meal-kits (Conway, 2019). Considering that these are only orders from one single meal-kits provider, it appears that the demand for meal-kits offerings is increasing rapidly.

The growing success of meal-kits providers resulted in the arrival of different meal-kits offered by supermarkets, such as the Allerhande box by Albert Heijn (Allerhande, 2020).

Just like other meal-kits, the Allerhande box can be delivered to the consumer's doorstep (Allerhande, 2020). A major difference between the supermarket meal-kits and boxes from other providers, is that the meal-kits from the supermarket can be bought without a monthly subscription. Furthermore, the supermarket meal-kits can be bought offline (Maaltijdbox, 2019) as opposed to the other meal-kits who can only be bought online (Foodboxen, 2020). Another difference is that the supermarket meal-kit can contain one to three meals depending on how much a customer wants to buy (Allerhande, 2020), whereas the meal-kits from other providers contain meals for at least two to three days (Foodboxen, 2020).

Besides these meal-kits, supermarkets also introduced another type of meal-kits which is called "fresh packages" (in Dutch, *verspakket*). In general, fresh packages consist of soup packages or meal packages (Jansen, 2018). These meal-kits can also be purchased one-off without having to commit to a monthly subscription. This turned out to be a success as well; one-third of the Dutch households buy meal packages sometimes and almost 50% of the Dutch households indicated that they buy soup packages regularly (Jansen, 2018). The difference between these fresh packages and the Allerhande box is that the fresh packages do not always contain all the ingredients needed, which means that other ingredients need to be purchased separately (Ah, n.d.). Additionally, the number of choices concerning meals for fresh packages is limited, in comparison to for example the Allerhande box (Cammelbeeck, 2019). Within this research, the focus will be laid upon these two meal-kits provided by supermarkets: the regular meal-kit and the fresh package.

The current literature mainly aims at convenience food or other types of food in general, without the inclusion of meal-kits. For example, some research is conducted on the environmental impact of meal-kits (Heard, 2019). Other research is more aimed at the debate around the term convenience food being outdated, because of the arrival of meal-kits (Hertz, 2017; Jackson, 2015).

Brunner, Van der Horst, and Siegrist (2010) discussed multiple drivers for convenience food consumption such as physical effort, mental effort, value for money, cooking skills, naturalness, and price. The goal of this thesis is to identify whether the most important drivers found by Brunner et al. (2010) are different when they are applied to meal-kits offerings. A contribution to the existing body of knowledge concerning convenience food is established by comparing the results from the drivers of meal-kits offerings to the drivers of other categories of convenience food (highly processed food, moderately processed food, single components food, and salads). This would clarify the differences and similarities in consumer behavior towards meal-kits and convenience food. The following research question

is formulated: *How do consumer characteristics and marketing actions influence the purchase intention of meal-kits offerings, and how is this effect being moderated by regular meal-kits and fresh packages?*

The first theoretical contribution will be creating more insights into the influence of consumer characteristics on the purchase intention of meal-kits. When looking at the results from Brunner et al. (2010), it can be concluded that the strongest drivers that were found are consumer characteristics such as age and nutrition knowledge. It was found that nutritional knowledge had a negative effect on the consumption of convenience food. After all, if a consumer has more knowledge about nutrition values, they would rather buy fresh and healthy food and not ready-to-eat convenience food. Furthermore, age also had a negative effect on the consumption of convenience products (Brunner, 2010). It is expected that the purchase intention of meal-kits will have different results when it comes to these drivers. This is mainly because meal-kits are different in nature with respect to the other forms of convenience food. Firstly, the amount of effort that has to be put into the meal is different for meal-kits. Other forms of convenience food used in the study of Brunner et al. (2010) are mostly ready to eat or require minimal effort to consume the product, whereas meal-kits have to be cooked from scratch. This distinction in the amount of effort that needs to be put into the meal is what makes meal-kits different from the other forms of convenience food. Additionally, the aim of convenience food is different when compared to meal-kits. Previous research suggests that the lack of inspiration in cooking a meal leads to the consumption of convenience food (Prim, 2007; Hertz, 2017). Whereas meal-kits seem to be an attempt to change standard dinner routines, rather than responding to the lack of inspiration of consumers (Hertz, 2017). Furthermore, meal-kits consists of fresh ingredients rather than pre-cooked or frozen ingredients, which makes the product itself different in terms of healthiness in comparison to the other forms of convenience food. So, by including the construct consumer characteristics more insights will be gained concerning the impact of consumer characteristics on the purchase intention of meal-kits.

The second contribution is aimed at creating insights into how marketing actions (such as price and packaging) influence the purchase intention of meal-kits. Previous research investigated the influence of pricing on purchase intentions of food in general, organic food, and convenience food (Brunner, 2010; Hansen, 2018; Massey, 2018; Andersen, 2011; Paul, 2012). Contradicting effects were found in terms of positive or negative effects, but the results show that price is proven to be an important factor concerning the purchase intention and consumption of food. This is the reason why price is included as a marketing action within

this thesis. Since there is no academic research done on the influence of pricing on meal-kits, this study would contribute to this lack of knowledge. Besides pricing, the variable packaging is included in the marketing actions. Packaging is proven to be a critical selling point when it comes to the purchase intention of products, especially with fresh food (Ampuero, 2006). Moreover, the literature aimed at consumer behavior towards packaging serves as an additional reason to include packaging as a variable. For example, packaging attributes like transparency is seen as the most important attribute when making a purchase decision in general (Ragaert, 2004). Additionally, Simonds & Spence (2017) found that packaging can lead to positive or negative evaluations of the product and therefore affect the purchase decision of consumers. Thus, the literature covers several marketing actions that are proven to influence the purchase intention of consumers. The emphasis in these studies is laid on the purchase intention of products in general, convenience food, and organic food, but not on meal-kits. Therefore, the construct marketing actions is included within this thesis, to investigate the effect of marketing actions on purchase intentions of meal-kits.

The third contribution of this thesis deals with the moderating impact of the different characteristics of meal-kits. As mentioned earlier, the amount of meal-kits solutions is growing rapidly over the years (Petrak, 2019). Besides the regular meal-kits being offered, supermarkets introduced specialized meal-kits like fresh packages. Since the amount of meal-kits offerings will further increase in the future (HelloFresh, 2020; Conway, 2019; Petrak, 2019), it would be interesting to know if these types of meal-kits have differential effects on consumers' purchase intention. Currently, there is no specific literature on these differences in the type of meal-kits on the market. In that sense, by including the moderating effect of regular meal-kits and fresh packages, a theoretical contribution is established.

1.1 Outline

The outline of this thesis is as follows. In chapter 2 a summary is provided of all the relevant literature concerning the problem. The chapter will end with an overview of the conceptual model and the hypotheses. Next, the methodology is discussed in chapter 3 in which the research method will be explained in more detail. An overview of the results of the research will be given in chapter 4. Afterwards, the results will be discussed and conclusions will be drawn in chapter 5.

2. Literature review

This chapter provides an overview of the most important literature concerning the research problem. Some literature discussed in this chapter is aimed at organic food. The reason for this is that the properties of organic food are closer to meal-kits than convenience food in general, especially on the aspect of health perceptions. Convenience food is often ready to eat or processed food like frozen pizza (Brunner, 2010), whereas organic food is non-processed fresh food (Paul, 2012). Therefore, the properties of meal-kits are closer to organic food in comparison to convenience food. By comparing the literature of organic food and convenience food, a more exhaustive picture will be drawn of the factors influencing the purchase intention of food.

2.1 Convenience food

Convenience food is not clearly defined in the literature. According to Brunner et al. (2010), convenience food can be theoretically defined into four different categories: highly processed food (such as chilled or frozen food and canned food), moderately processed food (such as premade sandwiches), single components (e.g. frozen fries), and salads. Szabo (2011) on the other hand, uses the term convenience food to refer to fast foods, snack foods, and packaged, canned, frozen or prepared food. Furthermore, they emphasize the idea that the consumer is not directly involved in the work of growing, raising, or harvesting the products (Szabo, 2011). To make things even more complex, Halkier (2014) expanded the convenience food category by including other forms of food to this definition, such as fresh-cut fruit, grilled meat, and soup.

Since the category of food belonging to convenience food is so broadly defined, researchers started to emphasize the benefits that convenience food can provide. For example, Brunner et al. (2010) & Contini, Boncinelli, Scozzafava, and Casini (2018) described convenience food as products that help the consumer minimize time as well as the physical and mental effort required for food preparation, consumption and clean-up (Brunner, 2010; Contini, 2018). Here, the focus is not solely on which types of food belongs to the term, but also on the different benefits it provides for the consumer. Apart from minimizing time and physical effort, they also focus on the decrease in mental effort such as having to decide what to eat. Grunert (2003) also acknowledged that convenience usually involves making something easier, such as saving time at various phases of the preparation of a meal including planning, preparation, eating, and cleaning up afterward.

Based on these definitions, it can be said that the term convenience food is a multifaceted term that is somewhat problematic when it comes to one overall definition. Since the term is too broadly defined, some authors plead for more common ground (Scholliers, 2015, Jackson, 2015; Hertz, 2017). However, within this thesis, convenience food will be seen as food products that reduce time, physical effort, and mental effort.

2.2 Meal-kit characteristics

As mentioned earlier, this thesis focuses on two different types of meal-kits: “regular meal-kits” and “fresh packages”. The regular meal-kits are boxes provided by supermarkets which are similar to the meal-kits provided by for example “HelloFresh”. The major difference between boxes from supermarkets and boxes from other suppliers, is that the boxes from the supermarket can be bought without a monthly subscription. Also, most of the other meal-kits on the market contain meals for at least two to three days (Foodboxen, 2020). Whereas the boxes from the supermarket can either be bought for one single meal, or up to five meals, depending on what the consumer desires (Allerhande, 2020). These meals change every week, so the same meal cannot be purchased two weeks in a row (Maaltijdbox, 2020). Another major difference between the supermarket meal-kits and the meal-kits from other suppliers, is that the supermarket meal-kits can be bought offline (Maaltijdbox, 2019). This means that the consumers does not have to order these supermarket meal-kits online.

The fresh package on the other hand, is a smaller variant than the boxes in the sense that it consists of fresh ingredients for only one meal like soup for example (Jansen, 2018). These meal-kits are oftentimes not fully complete, which means that additional ingredients, such as meat, need to be purchased separately. An example of this is the lasagna fresh package (Ah, n.d.). When looking at the recipe description, it can be noticed that the consumer has to add additional ingredients themselves (minced meat, milk and cheese). Another difference in comparison to the regular meal-kits is that the number of choice options for fresh packages are limited. Currently, there are around five different meal options available in the supermarket (Cammelbeeck, 2019). However, due to the increasing sales, the number of fresh packages options are going to expand in the future (ZON magazine, 2018). Lastly, the fresh packages can also be bought offline just as the supermarket meal-kits (Maaltijdbox, n.d.).

2.3 Consumer characteristics

In order to gain more understanding of how consumer characteristics influence the purchase intentions of food, the literature aimed at the characteristics of age and health awareness will be highlighted. The reason for this focus is because Brunner et al. (2010) found that age, naturalness, and nutrition knowledge were some of the most important predictors of consumption for convenience food. Next, the effects of age and health awareness on the purchase intention of food in general will be discussed, using the current literature.

2.3.1 Age

The effects of age on purchase intention of food have been investigated before. Brunner et al. (2010) found that age was one of the strongest predictors of the consumption of convenience food. The effect was in this case negative, which means that the older the consumer, the fewer convenience products he or she will consume. The cause of this effect is due to the amount of spare time older consumers have. Since they have more spare time, they have more time to cook a meal. Therefore, they would be less likely to buy convenience food. Damari & Kissinger (2018) investigated the amount of food purchased per household, to analyze the factors that drive the consumption of food in general. They found that the amount of food consumption per person increases by age. So the older the person, the more food he or she consumes. The results indicate that on average, the elderly (70+) and middle-aged (52-70) population consume more vegetables and fruit compared to the younger age groups. So, Damari & Kissinger (2018) stated that the consumption of food is lower in households where the average age is also lower. However, Hansen, Sørensen, & Eriksen (2018) investigated the drivers for the consumption of organic food specifically. The results show that in this case, age negatively influences organic food consumption, which is in line with the findings of Brunner et al. (2010). This effect can be explained by the fact that younger people are more likely to show a positive attitude towards organic food behavior (Hansen, 2018; Grebitus, 2015). In sum, the literature concerning age tells us that the effects of age on purchase intention are diversified.

2.3.2 Health Awareness

Within this thesis, the concept of (self-) health awareness is used. The reason why this term is used is because health awareness captures a higher level of health concern in comparison to nutrition knowledge. (Self-) health awareness can be defined as the way in which consumers are aware or concerned about their health, and motivated to improve or maintain this by engaging in healthy behaviors (Kraft & Goodell, 1993; Newsom, Mcfarland, Kaplan, Hugnet,

& Zani, 2005). Moorman & Matulich (1993) found that consumers with stronger health motivations perform corresponding health behaviors, such as making healthy food choices. Additionally, Verbeke (2005) found that the attitudes of consumers towards health are central when it comes to the acceptance of food: if consumers pursue a healthy lifestyle or diet, they are more willing to accept functional food. Based on this research, Ares (2008) evaluated the influence of nutritional knowledge on perceived healthiness and willingness to try functional foods. The results indicate that consumers with a high level of nutritional knowledge were interested in the additional value of healthy products, and consumers with a low level of nutritional knowledge were not interested in the consumption (Ares, 2008). So, this implies that besides health awareness, nutritional knowledge is also an important factor in the consumption of functional foods. Furthermore, Demartini et al. (2019) suggest that when individuals have little health concern, they could still form a positive attitude towards healthy food, if additional information concerning the properties of the food is provided.

Concluding, it is decided that the concept of health awareness is seen as a consumer characteristic within this study. This is because this term is more generally aimed at consumer's health concerns (Kraft, 1993), whereas other concepts such as nutritional knowledge are specifically aimed at consumers' nutritional knowledge of food such as proteins and fat (Ares, 2008).

2.4 Marketing actions

Next, the effects of marketing actions on the purchase intention of food will be discussed. The focus lies on price and packaging. Pricing is included because several authors, which are described below, found that price is proven to be an important factor in relation to the purchase intention of food. Packaging is included because packaging is a critical selling point when it comes to purchase intention of products (Ampuero, 2006).

2.4.1 Pricing

Several authors conducted research on the subject of pricing concerning the purchase intentions of food (e.g., Brunner, 2010; Massey, O'Cass, & Otahal, 2018; Andersen, 2011; Paul & Rana, 2012). It is known that convenience shoppers are less price-sensitive than non-convenience shoppers, which implies that consumers of convenience products are willing to pay a bit extra for the convenience they seek (Swoboda & Morschett, 2001; Brunner et al. 2010). However, the willingness to pay extra has its limits, since Brunner et al. (2010) found that price has a negative influence on the consumption of convenience products. This means that the higher the price of convenience food, the lower the purchase intention. Hansen et al.

(2018) also investigated the influence of price on the consumption of food, but in this case with a specific focus on the consumption of organic food. The results show that a higher price of organic food can act as a barrier for consumers when purchasing this kind of food. Thus, also in this case the effect of price turned out to be negative.

However, contradicting effects were found by other authors. Massey, et al. (2018) found that when consumers perceive organic food to be expensive, their intention to purchase this kind of food also increases. A possible explanation for this finding is the variability in the price perceptions of the consumer. Because for some consumers, higher prices serve as an indicator of quality and therefore increase the desirability of organic food (Andersen, 2011). Similar results were found by Paul & Rana (2012), who studied the factors influencing consumer behavior towards organic food. The results state that consumers also believe that higher prices can be paid for healthy contents of products, as long as the health benefits of the product are clear.

In sum, the literature concerning prices tells us that the effects of price on the purchase intention of food are diversified, depending on the type of food. The effect of price on convenience food tends to be negative (Brunner, 2010) whereas with organic food the price tends to have a positive effect (Hansen, 2018; Massey, 2018; Andersen, 2011; Paul, 2012).

2.4.2 Packaging

The main purpose of food packaging is to protect the contents from contamination or other external influences and ensuring the quality and safety of food (Narayanan, 2017). The appearance of the packaged fresh food is also a critical selling point when it comes to the purchase decisions of consumers (Ampuero, 2006). Hence, the packaging of products is constantly being developed and updated in order to meet the changing demand of consumers (Koutsimanis, 2012). Various packaging materials and technologies are available for the appliance in the fresh food industry (Koutsimanis, 2012). The influences of these various kinds of packaging on consumer behavior have been investigated in the literature. For instance, Ragaert, Verbeke, Devlieghere, & Devereure (2004) investigated the consumer perceptions and importance towards different attributes of fresh packaged products. Among these attributes were transparency, touch ability, shape, and information. Consumers were asked to rate the importance of the different attributes at various consumption stages. It turned out that at the stage of making the purchase, transparency is seen as the most important attribute of a package (Ragaert, 2004). The other attributes, also known as experience attributes, were more important during the consumption stage of the product.

The more specific effects of package transparency on purchase intention of products have been examined as well. Billeter, Zhu, & Inman (2012) found that transparent packaging led to the assumption that the product was more trustworthy, had greater consumer preferences, and the intention to purchase turned out to be greater. Furthermore, Simmonds & Spence (2017) state that transparent packaging can lead to positive or negative product evaluations, such as perceived healthiness and quality, depending on how visually appealing the product is.

Thus, the literature review tells us that marketing actions and consumer characteristics influence the purchase intention of food. There are some differences and similarities in the findings of the authors, which have been emphasized. Based on the literature discussed above, the conceptual model including the hypotheses will be explained in the next chapter.

2.5 Conceptual model

In this paragraph, the relations between the variables drawn in the conceptual model will be explained. Furthermore, the expected positive and negative effects of these relationships will also be hypothesized. The conceptual model is drawn in Figure 1. The conceptual model consists of four different variables: Consumer Characteristics, Marketing Actions, Meal-kits Characteristics, and Purchase Intention. The consumer characteristics are based on prior research from Brunner et al. (2010). Since it is expected that the effects of these drivers are different for meal-kits, they are included in the model as the main effects.

Furthermore, the marketing actions price and package transparency are included in the model. As mentioned earlier, price is being taken into account because several authors found that price is proven to be an important factor in relation to the purchase intentions of food (Brunner, 2010; Hansen, 2018; Massey, 2018). The packaging is included because this was also deemed as an important factor when it comes to the purchase intention of products (Ampuero, 2006). The results from Ragaert et al. (2004) show that from the consumers' point of view, transparency is seen as the most important packaging attribute when making a purchase decision. Hence is why the focus lies on transparency packaging. Lastly, the moderating variable meal-kit characteristics are included and consist of regular meal-kits and fresh packages because it is expected that the effects on purchase intention will differentiate. The specific hypothesized effects are explained below.

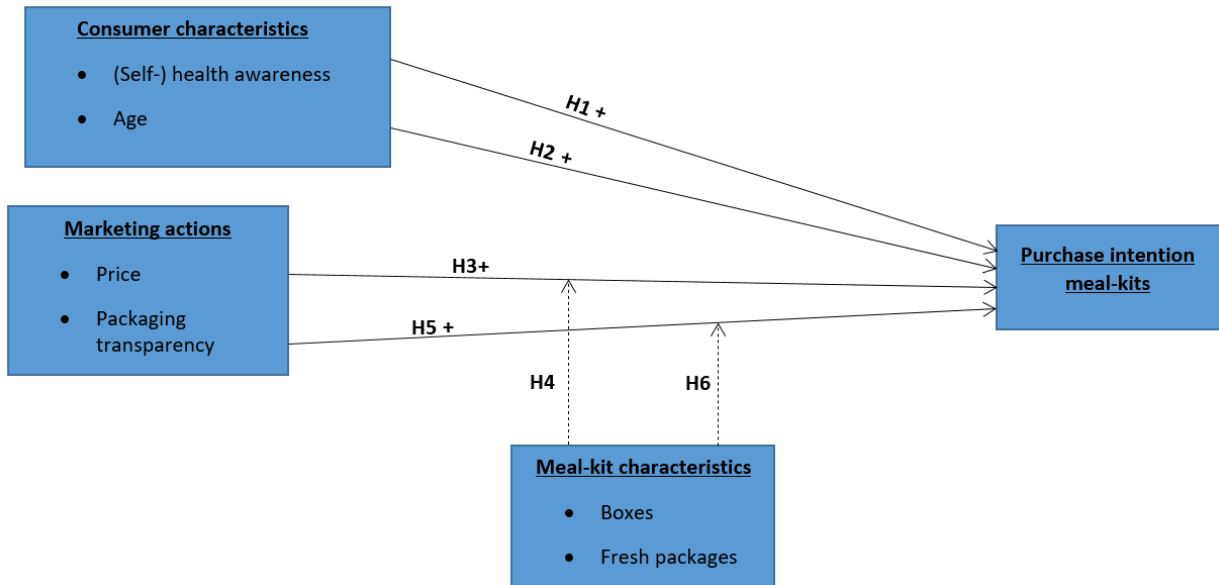


Figure 1: Conceptual model

Health awareness

The results from Brunner et al. (2010) indicated that nutrition knowledge had a negative effect on the consumption of convenience food. However, since this is based on the fact that convenience food is perceived as unhealthy (Jansen, 2018) and would therefore lead to a decrease in purchase intention, it is expected that this effect would be different with meal-kits. Moorman & Matulich (1993) found that consumers with stronger health motivations perform corresponding health behaviors, such as making healthy food choices. This would imply that consumers are more likely to purchase healthy food options when their health motivations are strong. Additionally, Verbeke (2005) and Ares et al. (2006) found that attitudes of consumers towards health are central when it comes to the acceptance of food. Therefore, consumers with a high level of nutrition knowledge were more inclined to purchase healthy products. Given these findings, together with the perception of meal-kits being healthy (Hertz, 2017), it is expected that the health awareness of consumers has a positive effect on the purchase intention of meal-kits.

However, one could question whether highly health-aware people would rather buy all the ingredients separately instead of buying a meal-kit because that would be a more healthy option from their perspective. Nonetheless, it is expected that consumers would still purchase the meal-kits instead. The reason for this is that meal-kits are already perceived as healthy since they consist of fresh ingredients rather than pre-cooked or frozen ingredients (Hertz, 2017). Additionally, meal-kits are a more convenient option because it reduces the time and

meal planning for consumers (Contini, 2018; Hertz, 2017). Thus, when consumers have an increased awareness towards being healthy, they would be more inclined to buy meal-kits instead of gathering all the ingredients separately. The first hypothesis will be:

H1: There is a positive effect of health awareness on the purchase intention of meal-kits.

Age

Previous research by Damari & Kissinger (2018) concluded that the amount of food consumption increases by age. So in this case, age has a positive effect on the consumption of food. However, the results from Brunner et al. (2010) contradict this finding. They indicated that age had a negative effect on the consumption of convenience food. Hansen et al. (2018) found similar results while investigating the drivers for the consumption of organic food. The effect can be explained by the fact that younger people would be more inclined to show a positive attitude towards organic food. This is because involvement in health and sustainability is a key trigger for increasing healthy and sustainable eating (Hansen, 2018; Grebitus, 2015). The differences in the effects found between the authors can be related to the type of food. In the case of Damari (2018), food in general was being addressed. Hansen et al. (2018) laid more focus on organic food and Brunner et al. (2010) highlights the types of convenience food. Furthermore, according to Packagedfacts (2017) consumers within the age category between 25 and 44 years old are twice as likely to buy meal-kit subscriptions. This means that the age category between 25 and 44 years old is the strongest predictor of who uses meal-kits (Packagedfacts, 2017).

Based on this knowledge, it can be concluded that the effects of age on purchase intention of food are diversified in the literature. The expectation for this study is that age would have a positive effect on the purchase intention of meal-kits. This is because meal-kits do require some time and effort to prepare (Hertz, 2017). Therefore, older consumers would be more inclined to purchase meal-kits, rather than the other forms of convenience food. Furthermore, apart from saving time, meal-kits are also aimed at consumers who are looking for a change in dinner routines (Hertz, 2017). This does not solely apply to older consumers since younger consumers or families can also have a need to change dinner routines. Especially families can get stuck in food routines, wherein the same meals are being prepared in vicious circles (Hertz, 2017). Based on these reasons, the hypothesis will be:

H2: There is a positive effect of age on the purchase intention of meal-kits.

Price

Brunner et al. (2010) found a negative influence of price on the consumption of convenience food. Additionally, Hansen et al. (2018) found that a higher price of organic food can act as a barrier for consumers when they have to make a purchase decision. However, it is also known that convenience shoppers are willing to pay extra for the convenience they seek (Swoboda, 2001; Brunner, 2010). Furthermore, Massey et al. (2018) concluded that when consumers perceive organic food to be expensive, their intention to purchase this kind of food also increases. This can be explained by the fact that consumers believe that higher prices can be paid for the healthy content of products (Paul, 2015). So, from previous research it can be derived that the effects of prices on purchase intention of food are differential. When it comes to convenience food, the effect of price on the purchase intention tends to be negative. However, when the food is perceived to be more healthy or matches the convenience the consumer seeks (Swoboda, 2001), the effect of price on purchase intention tends to be positive. Nonetheless, this does not imply that consumers are willing to pay 100 euros for a meal-kit. It merely indicates that consumers believe that a higher price can be paid for healthy content and convenience, in comparison to the regular standard price (Paul, 2015; Swoboda, 2011). Therefore, the hypothesis will be:

H3: There is a positive effect of price on the purchase intention of meal-kits.

Yet, in this case it is expected that the main effect of price on purchase intention of meal-kits is moderated by meal-kits characteristics. Earlier in the literature review, the distinction was made between “regular meal-kits” and “fresh packages”. It is expected that differential effects would occur when it comes to these two meal-kits forms, because of the difference in the amount of convenience that is offered by these meal-kits. As mentioned earlier, regular meal-kits contain all the ingredients needed for a single meal. Therefore, it is expected that price would have a positive effect on purchase intention for the regular meal-kits, because consumers would be willing to pay a little bit extra for the additional convenience they get (Swoboda, 2001; Brunner, 2010). In this case, the convenience consists of not having to seek for other ingredients in the supermarket. Therefore, the prediction is that:

H4: There is a positive effect of price on the purchase intention of meal-kits, which is stronger for regular meal-kits as opposed to fresh packages.

Packaging

Packaging transparency is seen as the most important attribute when making a purchase decision (Ragaert, 2004). Billeter et al. (2012) found that transparent packaging led to the assumption that the product was more trustworthy, and therefore leads to an increase in the purchase intention of products. Simmonds & Spence (2017) state that transparent packaging leads to product evaluations which can be positive or negative depending on the visual appeal of the food. So for example, if the food is not visually appealing it would lead to negative evaluations, and if the food is visually appealing this would lead to positive evaluations. Also, it is found that products with transparent packaging are deemed more healthful in comparison to non-transparent packages (Sioutis, 2011; Riley, Da Silva & Behr, 2015).

For these reasons, it is expected that transparent packaging would positively influence the purchase intention of meal-kits. This is mainly because consumers assume that the product is trustworthy (Billeter, 2012). Additionally, since the consumers can observe the food contents, it is deemed more healthful in comparison to non-transparent packages (Sioutis, 2011). Also, it is expected that some consumers could be hesitant with buying non-transparent meal-kits because they cannot visually observe or inspect the contents of the product. For these reasons, it is expected that consumers would be more likely to purchase transparent meal-kits over non-transparent meal-kits. So the hypothesis becomes:

H5: There is a positive effect of transparent packaging on the purchase intention of meal-kits.

However, this main effect is expected to be moderated by meal-kit characteristics. More specifically, it is expected that the effect of package transparency will be stronger for the fresh packages as opposed to the regular meal-kits. According to the literature aimed at the visual influence of packaging on in-store buying decisions, the mental choice processes of consumers differ in particular situations (Clement, 2007). So, having to choose from for example a large assortment, has a negative influence on the decision making of consumers. The cause of this is that consumers tend to get lost in an overload of visual information (Iyengar and Lepper, 2000). Furthermore, too many product attributes force the consumer to simplify the decision process, which negatively impacts the decision-making process in front of the shelf (Fasolo, Misuraca, and McClelland, 2003).

Based on this knowledge, it can be implied that having a lot of product attributes could influence the decision-making process during a purchase. Hence it is plausible to expect that more product attributes could influence the purchase intention of a product, because the consumer starts to hesitate which can lead to not purchasing the product.

As mentioned earlier, regular meal-kits contain more ingredients as opposed to fresh packages because they contain all the ingredients needed for a meal. Therefore, this product has more product attributes in comparison to the fresh packages, because the ingredients of fresh packages are not all present (Ah, n.d.). If the regular meal-kits were to be transparent, all the ingredients would be emphasized and hence the number of visible product attributes will increase. This will cause the consumer to evaluate all the ingredients and hence slow down the decision-making process, which can potentially influence the purchase intention of the meal-kit. However, it is not expected that this effect would be negative, because the visibility of the meal-kit contents still gives the consumers the feeling of being trustworthy (Billeter, 2012) and the perception of being healthful (Sioutis, 2011; Riley, 2015). So, the effect of transparent packaging on regular meal-kits will be merely smaller compared to fresh packages, due to the number of visible product attributes. This leads to the last hypothesis: *H6: There is a positive effect of transparent packaging on the purchase intention of meal-kits, which is stronger for fresh packages as opposed to regular meal-kits.*

3. Methodology

In this chapter, the research methodology will be discussed. First, the research design will be explained. Next, the variables within the conceptual model will be operationalized. Furthermore, the formula that will be applied during the analysis is given. Lastly, research ethics are discussed.

3.1 Research design

Within this study, a quantitative research method is used. Quantitative analysis allows for much larger sample sizes, which will increase the generalizability to a large population (Myers, 2013). In other words, it increases the external validity of the results (Myers, 2013). The data needed for quantitative research can be generated using secondary data or questionnaires (Muijs, 2011). In this study, a questionnaire will be used to gain information on the consumer characteristics age and health awareness.

Furthermore, to analyze the influence of marketing actions on purchase intentions, an online experiment will be conducted. This will be realized using a between-subjects design, which means that different groups of participants are exposed to only one particular treatment or condition (Budiu, 2018; Lane, n.d.). More specifically, the design of the study will be a 2 (price high/low) x 2 (packaging transparent yes/no) x 2 (regular meal-kit/ fresh package) between-subjects design.

The reason why the decision is made to conduct a between-subjects design is that it minimizes the learning and transfer of participants across conditions (Sauro, 2015). After a participant completed a series of questions on a specific subject, he or she will be more knowledgeable about this subject than before (Sauro, 2015; Budiu, 2018). By having this knowledge, the participant will become more efficient as he or she progresses through the questions. By having a between-subjects design, this effect of learning will not be an issue, because the participants are never exposed to several levels of the same independent variable (Budiu, 2018). Another advantage of using the between-subjects design is that these studies have shorter sessions than within-subject designs (Budiu, 2018). This is due to the fact that the participants are only exposed to one treatment or condition, as opposed to all the conditions (Lane, n.d.). This means that the length of the experiment is relatively short and therefore less tiring for the participants. For this reason, the between-subjects design would be more beneficial within this study, because there are eight different scenarios in the study design. This would be too much information for only one participant, which could negatively influence the validity of the results (Sauro, 2015). By spreading out the different scenarios across the participants, a more achievable design will be accomplished.

The last reason why a between-subject design is used is that the experiment is easier to set up. This has to do with the order randomization, to make sure there are no order effects (Budiu, 2018). When a study involves multiple independent variables, it would be difficult to apply a within-subjects design, because the order of the stimuli needs to be random for each participant. Using a between-subjects design, this issue would be easier to deal with.

The size of the sample is determined based on the rule of thumb that is often used within regression analysis (Statisticssolutions, 2020; Field, 2018). It states that 10 observations per predictor variable is a minimum, which would be at least 50 cases within this study. However, since this is a bare minimum requirement, another criterion will be used. Based on the estimated effect sizes per number of predictors (Field, 2018), it can be derived that a sample size of 100 should be sufficient when the number of predictors is less than six. Within this study there are five predictors, so based on this knowledge the effective sample size is set at 100 cases. Accounting for non-response, it is expected that the response rate would be around 60% (Lindemann, 2019). This means that the amount of participants that need to be approached becomes roughly 160 participants.

3.2 Scenarios

As mentioned earlier, a 2x2x2 between-subjects design will be applied during this study, using a scenario-based concept. Every participant will be randomly assigned to one of these scenarios, including a general explanation of the particular meal-kit in this scenario (see Appendix A for scenarios). When describing the scenarios, existing meal-kit products will be used to represent a regular meal-kit and a fresh package. This general explanation is needed in order to make it clear to the participant what is meant by the terms regular meal-kit and fresh package.

Because there are several types of fresh packages like soup and regular meals (Jansen, 2018), it is decided that the fresh package of a regular meal is shown. In this way, a better comparison can be made with respect to the regular meal-kits, which also contains ingredients for a regular meal (Allerhande, 2020). After the general description of these types of meal-kits is given, a visualization is shown of one particular meal-kit. It is important to visualize these meal-kits, because it enables the participants to carefully evaluate what is being asked, without having to read a lot of text. This will save time for the participants and is also less intensive (Budi, 2018). The meal that is shown in every scenario is lasagna. By doing this, all the conditions are held constant and allows for manipulating other factors such as price, package transparency, and meal-kit type.

However, no particular brand is mentioned during the experiment. The reason for this is to prevent potential bias in the sense that participants might have positive or negative attitudes towards a brand (East, 2017). If a participant has a negative attitude towards Albert Heijn for example, this could lead to negative outcomes of the survey just because the participant had a negative experience with the supermarket in the past. For this reason, the brands were blurred out using Photoshop to eliminate the bias effect.

After the visualization of the meal-kit is given, the participants were asked to indicate their purchase intention of the given product (the scales that are used, are given in the next paragraph). After that, some standard questions of the survey will follow about the participants' characteristics such as health awareness and age (Appendix B).

3.3 Variable operationalization

Scales are needed to make the variables in this study measurable. To ensure the validity and reliability of this research, it is important to make use of scales that are valid and proven within the literature. Based on the literature, a selection of scales has been made. The chosen scales per variable are summarized in Figure 2 below.

<u>Variable</u>	<u>Authors</u>	<u>Questions</u>
Purchase Intention	Zúñiga (2016).	<p><i>Would you be willing to try the meal-kit?</i> Would not try / Would try</p> <p><i>Would you be willing to seek out more information about this product?</i> Would not seek out / Would seek out</p> <p><i>How likely is it that you are willing to try this meal-kit?</i> Not very likely / Very likely</p> <p><i>How probable is it that you are going to try to this meal-kit?</i> Improbable / probable</p> <p><i>Would you be willing to consider the meal-kit?</i> Would not consider / Would consider</p>
Age	Yeo et al. (2017).	What is your age?
Health Awareness	Chandon & Wansink (2007).	<p>I watch what I eat.</p> <p>I pay attention to what I eat.</p> <p>I pay attention to how much I eat.</p> <p>Eating healthy is important to me.</p> <p>Nutritional information influences me.</p>
Price	-	Experiment → High/Low
Transparent packaging	-	Experiment → transparent: Yes/No
Type of meal-kit	-	Experiment → Regular Meal-kit/Fresh Package
Other demographic information		<p>What is your gender?</p> <p>What is your highest level of education?</p>

Figure 2: measurement scales variables.

Purchase intention

The scale that is used to capture the purchase intention of consumers, is based on the purchase intention scale of Zúñiga (2016). This scale measures the likelihood of a consumer who is seeking out and trying to buy a particular product or brand. The scale consists of five items and is based on seven-point semantic differentials. The reliability of this scale is reported to have an alpha of .96. This scale is chosen based on the high reliability of the scale, and because it captures the purchase intention that is intended to be measured during this study.

Age

Measuring the variable age is relatively straight forward, as it is a continuous variable. The question that will be asked is shown in Appendix B. The results of the regression analysis in chapter 4 are based on the continuous variable. However, to give more details about the sample characteristics, a distinction is made in different age categories. In this way, a clear distinction can be made in the sample between young adults, adults, and seniors.

Health awareness

According to Chandon & Wansink (2007), the scale “Nutrition Involvement” is a reliable scale for measuring the degree to which a person is eating healthy and the associated behaviors, using a 5-point Likert scale (Chandon, 2007; Bruner, 2012). The reason why this scale is chosen is that the items in this scale capture the degree to which people are concerned with healthy eating and how much attention is paid to health when it comes to food intake. In this way, a rough estimation can be made of a person’s concern with healthy eating, without getting into too many details about sports and nutrition knowledge of the participant. The scales consist of eight items that are used to determine the degree to which a person places importance on eating healthy, but also the amount of attention they devote to nutritional information in a particular situation. The reliability of this scale was reported with an alpha of .83 (Bruner, 2012) and consists of eight items in total (Figure 2). However, the last three items are yes or no questions, which might suggest that two scales are combined. For this reason, the last three items are discarded to prevent statistical problems later on.

Price

Since price is considered as a marketing action in this study, it will be used as a manipulating variable. Per scenario, the price will be either set to “high” or “low”. Within the analysis, this was coded as a dummy variable using 1 and 0. This would come down to 0 = low price, 1 = high price. To determine a high or low price, the current meal-kit offerings are compared with each other. For the fresh packages, five different providers are selected and their lowest and highest prices are compared (see Appendix C). The soup packages were excluded since the focus lies on the regular meals from the fresh packages. Based on the information provided in Appendix C, the high price for the fresh package is set at € 5,15 and the low price for the fresh package is set at € 3,49.

A similar procedure is used to determine the high and low prices for the regular meal-kits. Five providers were chosen and the prices were determined based on the price per meal.

An overview of the prices can be found in Appendix C. However, the contrast between the highest price and the lowest price is very steep: € 20,98 versus €10,23. So the highest price would be so high, that participants could potentially think that it could be unrealistic. To prevent this from happening, the mean is taken from all the low prices which turned out to be € 13,05. For all the high prices, the mean turned out to be € 18,85. Therefore, the high price for the regular meal-kit is set at € 18,85, and the low price is set at € 13,05.

Transparent packaging

To measure the effects of transparency packaging, visualization is used. This entails that a picture is shown of the particular meal-kit in which the package is transparent, or with regular plain packaging. Within the analysis, a dummy variable will be used with the values 0 = non-transparent and 1 = transparent.

Meal-kit type

The different types of meal-kits that are used in the analysis are Fresh Package and Regular Meal-kit. A dummy variable is created with the values 0 = Regular Meal-kit and 1 = Fresh Package. For interpretation purposes, this variable is called “Fresh Package” in the analysis.

Other demographic information

Lastly, the survey ends with two general questions about the participants’ educational level and gender. The reason for this is to provide more demographic data of the sample.

3.4 Metrics

To predict the impact of the independent variables on the dependent variable purchase intention, a multiple linear regression analysis needs to be conducted. The formula of the multiple linear regression analysis is as follows:

$$\text{Purchase intention}_i = \beta_0 + \beta_1 * \text{Health awareness}_i + \beta_2 * \text{Age}_i + \beta_3 * \text{Price}_i + \beta_4 * \text{Packaging transparency}_i + \beta_5 * \text{Fresh package}_i + \beta_6 * \text{Price}_i * \text{Fresh package}_i + \beta_7 * \text{Packaging transparency}_i * \text{Fresh package}_i + \epsilon_i$$

The Purchase intention_i stands for the independent variable, and β_0 represents the intersection with the Y-axis. β_k stands for the estimated regression slope for the independent variable X_i . The ϵ_i denotes the random error term, since it is not possible to explain all the variances and differences that are found in the variables (Field, 2018). Furthermore, the moderating effect of

meal-kit characteristics is included using interaction terms and is denoted by the variable name “Fresh package”.

3.5 Research ethics

During this research, the general principles of research ethics were taken into account (Sekaran & Bougie, 2016). The most important responsibility of the researcher is to protect the anonymity of the participant and to treat their given information as strictly confidential (Sekaran, 2016). This is established by not asking participants to fill in their name during the survey, so their anonymity is warranted. Furthermore, the individual responses of the participants will be kept to the researcher and will not be shared with others.

Also, the idea of informed consent will be taken into account during this research (Dissertation, 2012). This entails that participants should understand that they are taking part in research and what is required of them. This is established by properly introducing the survey with a short explanation of the research without getting in too many details.

Lastly, before the participants take part in the survey, they are informed about their rights to withdraw from the survey at any given moment. By providing the right to withdraw, the participants are not pressured in any way to complete the survey if they do not want to (Sekaran, 2016).

4. Results

In this chapter, the results of the survey will be presented. First, some descriptive characteristics from the sample will be discussed. Next, the assumptions of the linear regression will be tested. Additionally, the results from the linear regression will be explained. Lastly, some robustness checks will be performed to make sure that the model is robust.

4.1 Descriptive statistics

The online experiment was made using the program Qualtrics and set out at random through social media platforms like Whatsapp and LinkedIn. Qualtrics is used because it is easy to use for the participants, and the obtained data can be easily exported to the data analysis program IBM SPSS Statistics (Qualtrics, n.d.). After the experiment was set out, a total of 117 respondents were obtained. First of all, it is important to take the missing data into account so that the validity of the results can be assured (Hair, Black, Babin & Anderson, 2014). The missing data analysis was conducted according to the four-step process for identifying missing data (Hair, 2014). Three cases contained missing data that were not ignorable because these respondents left all the questions of the survey unanswered. Therefore, they were excluded from the analysis. Furthermore, four cases contained only one missing value. To prevent deleting too much valuable data, it is decided to fix this issue by calculating a replacement value (Badr, 2019). The mean substitution method was used to calculate this replacement value. After excluding the cases containing missing-values, the final sample size consisted of $N = 114$. The descriptive data of the sample are given in Figure 3. Of these 114 respondents, 57.5% were male and 42.5% were female. The mean age of the sample was 34.2 years, with a range from 18 to 63 years (Figure 3). Furthermore, it can be noted that around 43% of all the respondents were young adults between 18 to 25 years old. The remaining 57% consisted of adults between the age of 26 to 59 years old, and seniors who were older than 60. Lastly, the majority of the respondents were either higher vocational educated (HBO) or higher.

<i>Variable</i>	<i>Specification</i>	<i>Percentage of the sample</i>
Gender	Male	57.5
	Female	42.5
Age (Years)	18-25	43.0
	26-40	24.6
	41-59	29.8
	≥ 60	2.6
Education	High school (VMBO, HAVO, VWO)	4.4
	Intermediate vocational education (MBO)	11.4
	Higher vocational education (HBO)	50.0
	Academic education (master) or higher	34.2

Figure 3: Sample statistics

Variables

The values for Purchase Intention are computed based on the mean scores of all the items from the Purchase Intention scale (Zúñiga, 2016). The same procedure is used to compute the variable Health Awareness, so all the mean scores were calculated of all the items from the scale (Chandon, 2007). The descriptive statistics of all the variables are given in Figure 4 below.

<i>Variable</i>	<i>N statistic</i>	<i>Range statistic</i>	<i>Minimum</i>	<i>Maximum</i>	<i>Mean</i>	<i>Std. Deviation</i>	<i>Variance</i>
Age	114	45.00	18.00	63.00	34.20	12.95	167.59
Health awareness	114	2.60	2.40	5.00	3.86	0.61	0.37
Packaging	114	1.00	0.00	1.00	0.49	0.50	0.25
Price	114	1.00	0.00	1.00	0.51	0.50	0.25
Fresh package	114	1.00	0.00	1.00	0.49	0.50	0.25
Purchase Intention	114	6.00	1.00	7.00	3.64	1.65	2.73

Figure 4: Descriptive statistics

Furthermore, the descriptive statistics of the variable Purchase Intention will be discussed in more detail. Looking at Figure 5, it can be noted that the average purchase intention of fresh packages (3.98) is higher than the average purchase intention of regular meal-kits (3.31). So overall, the purchase intention of fresh packages is the highest. Additionally, the purchase

intention of meal-kits that were transparent averaged 3.70, while the purchase intention of non-transparent packaging was a bit lower (3.58). When looking at the price differences, it can be concluded that lower-priced meal-kits have a higher average purchase intention (3.80) when compared to the higher-priced meal-kits (3.48).

<i>Variable</i>	<i>N</i> <i>statistic</i>	<i>Mean</i>	<i>Std. error</i> <i>mean</i>	<i>Variance</i>
Fresh packages	56	3.98	0.223	2.799
Regular meal-kits	58	3.31	0.207	2.493
Transparent	56	3.70	0.225	2.854
Non-transparent	58	3.58	0.214	2.655
High price	58	3.48	0.216	2.722
Low price	56	3.80	0.221	2.743

Figure 5: Descriptive statistics Purchase Intention

4.2 Assumptions

Before the regression analysis can be conducted, some basic assumptions must be met (Hair, 2018; Field, 2018). The first assumption is that all the variables within the analysis are at least of metric measurement level (Field, 2018). Since the variables Price, Packaging, and Fresh package are already transformed from categorical variables into dichotomous variables using the dummy procedure, they can be included in the regression analysis (Field, 2018).

Furthermore, the variable Age is of metric level. This is based on the fact that respondents were asked to fill in their age, which can be considered as numerical data. For the variable Health Awareness, a Likert scale was used. This means that it can be seen as a ratio level (Sekaran, 2016), so it fulfills the metric measurement level requirement. Lastly, Purchase Intention was measured using a semantic scale ranging from 1 to 7, which can be seen as interval level (Sekaran, 2016).

Now that the first assumption of the metric measurement level is fulfilled, the next step is to check the linearity of the independent variables. This is needed because the regression analysis assumes linearity between the independent and dependent variables (Field, 2018). Hence it is important to check whether the variables are indeed linear. This is done by adding polynomials to the model (Field, 2018). Before the second and third power are calculated, the variables need to be centered (Field, 2018). This is done by computing a new variable wherein the mean of that variable is subtracted from the scores, so the mean score

becomes 0. By doing this, it is prevented that the independent variables would correlate too much with each other and therefore affect the efficiency of the analysis (Field, 2018). After centering the variables, the second and third-degree powers are being calculated for the independent metric variables Health Awareness and Age. The results are shown in Appendix D. Looking at the polynomials of the variable Health Awareness, it can be concluded that these are all not significant because all the p-values are $p > .05$. The same holds for the variable Age, because all the polynomials have p-values of $p > .05$. This means that all the independent variables are linear (Field, 2018).

The next assumption involves checking the multicollinearity statistics (Field, 2018). Ideally, the tolerance values of the independent variables should be at least higher than .20 (Hair, 2018). If this value falls below this threshold, then the independent variables are too highly correlated with each other. When looking at the results in Appendix D it can be concluded that every tolerance value lies above .20, which means that the assumption of multicollinearity is met.

The final assumption involves homoscedasticity, which implies that the error terms of the independent variables need to be constant (Hair, 2018). If it turns out that there are no constant error terms, the data will be heteroscedastic. To check this assumption, a scatterplot of the data is made (Appendix D). On the X-axis are the predicted values and the residuals are shown on the Y-axis. If there is a clear pattern, then the variance would not be constant (Hair, 2018). However, when looking at the graph (Appendix D), it can be concluded that there is no particular pattern in the data, which means that the assumption of homoscedasticity is met.

Before the linear regression analysis is conducted, one final reliability check will be carried out on the variables Health Awareness and Purchase Intention. The reason for this is that these constructs consist of multiple scale items that were taken together into one summated scale. To make sure that these constructs are reliable, the reliability analysis is conducted (Field, 2018). The results of the reliability analysis are shown in Appendix E. The Cronbach's alpha of the Health Awareness scale from Chandon & Wansink (2007) turned out to be $\alpha = .763$. This value indicates that the internal consistency among the scale items are sufficiently large enough because it is higher than the threshold of $\alpha = .60$ (Field, 2018). Additionally, it can be concluded that deleting certain items from the scale will not further increase the Chronbach's alpha (Appendix E). For this reason, it is decided to keep all the scale items.

Furthermore, the Purchase Intention scale from Zúñiga (2016) turned out to have a Cronbach's alpha of $\alpha = .950$, which is a very high value compared to the threshold of $\alpha = .60$

(Field, 2018). The Cronbach's alpha could be slightly higher when PI2 would be deleted. However, in this case, it is decided to keep the item in the analysis because the Cronbach's alpha is already sufficiently high enough according to the threshold. Now that the scales are proven to be reliable, the next step is to run the multiple regression analysis.

4.3 Results

All the results of the linear regression are depicted in the following figures below (9, 10, 11).

To start with the overall F-test of the regression model. As can be noted, there are two models included in the analysis. The first model consists of all the independent variables and the dependent variable, wherein all the main effects are being tested without any interactions between the independent variables. The second model does include the hypothesized interaction effects. In this way, a more comprehensive insight is created about the influence of the interactions on the results. By comparing the first model with the main effects to the second model with the interactions, it will become clear to what extent the interactions have an influence on the results.

Results model 1

The first model indicates that the F-test is not significant: $F(5, 108) = 1.308, p > .05$ (Figure 9). This is an indication that the estimated linear regression model does not provide a better fit to the data than a model that contains no independent variables (Field, 2018). This would mean that the results from the estimated model cannot be generalized to the population.

In Figure 10, the results of the overall model fit are given. The R^2 value of model 1 turns out to be $R^2 = .057$, which implies that only a small proportion (around 6%) of the variance in the dependent variable is explained by the independent variables in the regression model (Field, 2018).

The results of all the estimated coefficients of the model are given in Figure 11. Based on the estimated coefficients, it can be concluded that the effect of Packaging on Purchase Intention is not significant in model 1 ($\beta = .12, t = .40, p > .05$). Furthermore, the effect of Price on Purchase Intention is also not significant in model 1 ($\beta = -.32, t = -1.04, p > .05$). The beta coefficient is negative, which would suggest a negative effect of Price on Purchase Intention. However, this effect cannot be interpreted because it is not significant.

Next, it can be noted that there is a marginally significant effect between Fresh Package and Purchase Intention ($\beta = .58, t = 1.73, p = .08$). This would imply that the type of meal-kit (regular meal-kit or fresh package) influences the Purchase Intention of meal-kits.

More specifically, since the beta coefficient is positive, the Purchase Intention of fresh packages is higher compared to the Purchase Intention of the regular meal-kits. This is in line with the findings of the descriptive analysis in section 4.1, in which it was found that the average Purchase Intention of fresh packages (M: 3.98) is higher than the average purchase intention of regular meal-kits (M: 3.31).

Additionally, according to the results of model 1, there is no significant effect found between Health Awareness and Purchase Intention ($\beta = .03$, $t = .13$, $p > .05$). The beta coefficient is positive, which would indicate a positive relationship between Health awareness on the Purchase Intention of meal-kits. However, this effect is not significant. Furthermore, the variable Age also turns out to be not significant ($\beta = .01$, $t = .65$, $p > .05$). The beta coefficient would have indicated a positive relationship between Age and Purchase Intention. However, since $p > .05$ it can be concluded that there is no significant effect found between the variable Age and Purchase Intention.

Results model 2

According to the results of the F-test in Figure 9, it can be concluded that the second model also turns out to be not significant: $F(7, 106) = .94$, $P > .05$. This finding means that including the hypothesized interactions does not improve the overall significance of the model. Furthermore, according to Figure 10, it can be concluded that the R^2 value of model 2 is only a bit higher with $R^2 = .059$. This also means that only a small percentage of the variance in the dependent variable is explained by the other independent variables in the model (Field, 2018).

According to the estimated coefficients in Figure 11, similar results are found for the second model compared to the first model. The effect of the variable Packaging on Purchase Intention also turned out to be not significant in model 2 ($\beta = .02$, $t = .04$, $p > .05$). Furthermore, the effect of Price on Purchase Intention is still not significant in model 2 ($\beta = -.39$, $t = -.90$, $p > .05$). The beta coefficient would have denoted a negative relationship between Price and Purchase Intention, but the effect is not significant. Next, the variable Fresh Package has no significant effect on the Purchase Intention in model 2 ($\beta = .41$, $t = .75$, $p > .05$). This result contradicts the findings in model 1, in which this effect was found to be marginally significant. Moreover, the effect of Health Awareness on Purchase Intention is found to be not significant in model 2 ($\beta = .04$, $t = .15$, $p > .05$). This is also in line with the findings in model 1. The same holds for the effect of Age on Purchase Intention, which turned out to be not significant ($\beta = .01$, $t = .57$, $p > .05$). The beta coefficient would have denoted a positive relationship, but the effect turned out to be not significant.

The interaction effect of Packaging and Fresh Package on Purchase Intention turns out to be not significant ($\beta = .23$, $t = .36$, $p > .05$). This means that there is no combined effect of these two variables on the dependent variable Purchase Intention. The same holds for the interaction effect of Price and Fresh Package on the Purchase intention because this effect turned out to be not significant as well ($\beta = .15$, $t = .23$, $p > .05$).

<i>Model</i>		<i>Sum of Squares</i>	<i>df</i>	<i>Mean Square</i>	<i>F</i>	<i>Sig.</i>
1 ^a	Regression	17.63	5	3.53	1.308	0.26
	Residual	291.13	108	2.69		
	Total	308.76	113			
2 ^b	Regression	18.15	7	2.59	0.94	0.47
	Residual	290.60	106	2.74		
	Total	308.76	113			

Figure 9: ANOVA

^a = Regular model without interaction effects

^b = Includes the following interactions: Packaging*Fresh package, Price*Fresh package

<i>Model</i>	<i>R</i>	<i>R Square</i>	<i>Adjusted R Square</i>	<i>Std. Error of the Estimate</i>
1	0.239	0.057	0.013	1.642
2	0.242	0.059	-0.003	1.655

Figure 10: Model Summary

<i>Model</i>	<i>Variable</i>	<i>B</i>	<i>Standard Error</i>	<i>t-value</i>	<i>Sig.</i>
1	(Constant)	3.02	1.05	2.86	0.00
	Packaging ^a	0.12	0.31	0.40	0.68
	Price ^b	-0.32	0.31	-1.04	0.30
	Fresh package ^c	0.58	0.34	1.73	0.08
	Health awareness	0.03	0.26	0.13	0.89
	Age	0.01	0.01	0.65	0.51
2	(Constant)	3.13	1.09	2.85	0.01
	Packaging	0.02	0.44	0.04	0.97
	Price	-0.39	0.44	-0.90	0.37
	Fresh package	0.41	0.54	0.75	0.46
	Health awareness	0.04	0.26	0.15	0.88
	Age	0.01	0.01	0.57	0.57
	Package*Fresh package	0.23	0.64	0.36	0.72
	Price*Fresh package	0.15	0.63	0.23	0.81

Figure 11: Predicted beta coefficients

^a = Reference category is non-transparent packaging

^b = Reference category is low price

^c = Reference category is regular meal-kit

Hypothesis 1

The first hypothesis is “There is a positive effect of health awareness on the purchase intention of meal-kits”. Based on the results of models 1 and 2 it can be concluded that this effect is not significant. This means that there is no evidence found for a positive effect of Health Awareness on the Purchase Intention of meal-kits. Hence, H1 should be rejected.

Hypothesis 2

The second hypothesis predicts a positive effect of Age on the Purchase Intention of meal-kits. The results of models 1 and 2 indicate that there is no significant effect found of Age on the Purchase Intention of meal-kits. Based on this non-significant effect, it can be concluded that there is no evidence found for a relationship between Age and Purchase Intention, which leads to the rejection of H2.

Hypothesis 3

The third hypothesis is “There is a positive effect of Price on the Purchase Intention of meal-kits”. In section 4.1 it was found that meal-kits with a lower price have a higher purchase intention (M: 3.80) when compared to the higher-priced meal-kits (M: 3.48). This would denote a negative relationship. Based on the results of models 1 and 2 it can be noted that a negative effect would have been found between Price and Purchase Intention. However, this effect turned out to be not significant. For this reason, no evidence is found for H3 and should therefore be rejected.

Hypothesis 4

The fourth hypothesis predicts a moderation effect of meal-kit type on the relationship between Price and the Purchase Intention. However, when looking at the results of model 2, it can be concluded that the interaction effect between Price and Fresh Package is not significant. This means that the type of meal-kit does not significantly influence the effect of Price on Purchase Intention. Due to this finding, H4 should be rejected.

Hypothesis 5

The fifth hypothesis is as follows: “There is a positive effect of transparent packaging on the purchase intention of meal-kits”. Based on the results from the descriptive statistics in section 4.1, it is found that the purchase intention of transparent meal-kits averaged higher (M: 3.70) in comparison to non-transparent meal-kits (M: 3.58). However, since the effect of Packaging on Purchase Intention turned out to be not significant in both models, it can be concluded that these means are not significantly different from each other. This leads to the rejection of H5.

Hypothesis 6

The last hypothesis predicts a moderation effect between the meal-kit type and transparent packaging on the purchase intention of meal-kits. According to the results of model 2, it can be concluded that this effect is not significant. This means that there is no combined effect of the variables Fresh Package and Packaging on the Purchase Intention of meal-kits. Thus, it can be concluded that also in this case no evidence is found for the hypothesis and should therefore be rejected.

4.4 Robustness checks

Since the results from the linear regression analysis were mainly not significant, it is decided to look at the distribution of all the metric variables in the analysis to make sure that these are all normally distributed. This can be determined by looking at the skewness and kurtosis of the variables (Hair, 2018). If the Skewness/Standard Error Skewness $< |2|$, then the variable would be normally distributed. The same rule applies to the kurtosis: Kurtosis/Standard Error Kurtosis $< |2|$ (Field, 2018). All the skewness and kurtosis values of the metric variables are depicted in Appendix F. It appears that the variables Age, Purchase Intention, and Health Awareness are not normally distributed. To make the variables more normally distributed, transformations must be applied to the variables (Field, 2018). More specifically, the transformations: inverse, square root, natural logarithm, and squared were applied. Now that the variables are transformed, the skewness and kurtosis must be checked again to determine whether the transformation improves the distribution of the variables (Appendix F).

Looking at the results from the transformations, the decision is made to include the inverse transformation of the variable Age and the square root transformation of the variable Health Awareness. The reason for this is that these transformations significantly improve the skewness and kurtosis. However, it can be noted that the inverse variable Age makes the kurtosis slightly worse. Nonetheless, since the skewness improves a lot, it would be beneficial to use this variable in the analysis. This is because the skewness has a slightly bigger effect on the calculation of the correlations between variables, which is the basis for the regression analysis (Field, 2018). Lastly, since the transformations of the variable Purchase Intention did not significantly improve the distribution, it is decided to keep the original variable Purchase Intention in the analysis.

Results

Next, the assumptions of the regression analysis are being tested again (Appendix G) but this time with the transformed variables included. Based on the results of these assumptions, it can be concluded that all the assumptions are met.

The results of the regression analysis are given in Appendix G. Based on these results it can be concluded that the F-test and the overall model fit have similar results compared to the regression analysis from the previous section. So, it appears that there is no significant improvement with the transformed variables included.

Also, the estimated regression coefficients did not turn out to be different from the previous paragraph. All the effects are not significant, apart from the variable Fresh Package,

which is still marginally significant ($\beta = .64$, $t = 1.85$, $p = .067$). This is even slightly more significant compared to the results of the original variables ($\beta = .58$, $t = 1.73$, $p = .08$). Thus, it can be concluded that transforming the skewed metric variables into more normally distributed variables, yields similar results compared to the regression model from paragraph 4.3. Hence it can be assumed that the regression model is robust. Now that the robustness of the model is evaluated, the results will be further reflected in the next chapter.

5. Discussion and conclusion

The research question of this thesis is: *How do consumer characteristics and marketing actions influence the purchase intention of meal-kits offerings, and how is this effect being moderated by regular meal-kits and fresh packages?* Based on the findings it can be concluded that the consumer characteristics age and health awareness do not influence the purchase intention of meal-kits. The same holds for the marketing actions price and packaging, which also turned out to be not significant. Furthermore, the expected moderation effects between the marketing actions and purchase intention turned out to be absent. However, there is evidence found that the type of meal-kit does significantly influence the purchase intention of consumers. More specifically, the purchase intention of fresh packages is generally higher than the purchase intention of regular meal-kits.

5.1 Academic implications

Next, the results will be reflected and academic implications will be given. This is done by discussing why the results turned out to differ from the expectations.

Health Awareness

Based on the results of this study, it can be concluded that health awareness does affect the purchase intention of meal-kits. Apparently, the degree to which people are concerned with healthy eating and how much attention is paid to health, does not lead directly to a higher purchase intention of meal-kits.

This is in contrast to the findings of Moorman & Matulich (1993) and Verbeke (2005). According to Verbeke (2005) and Ares (2008), the attitude towards health would be central when it comes to the acceptance of functional food. Furthermore, Brunner et al. (2010) found that naturalness and nutrition knowledge of consumers is the most important driver for the consumption of convenience food. Apparently, this is not the case within the context of meal-

kits. So when it comes to meal-kits, health awareness is not seen as a central predictor for the purchase intention.

The reason why this finding is different within the context of meal-kits could be because of the difference between functional food and meal-kits. Functional food is food that contains added ingredients in order to improve people's health (Verbeke, 2005). While meal-kits on the other hand, are more aimed at providing convenience for consumers because it reduces time and meal planning (Contini, 2018; Hertz, 2017). An additional benefit of meal-kits is that it contains fresh ingredients, which lead to the perception of being healthy (Hertz, 2017). Therefore, since functional food is mainly aimed at improving people's health, the relationship between health awareness and purchase intention of functional food was found to be more crucial (Verbeke, 2005; Ares, 2008). Whereas meal-kits are being perceived as healthy (Hertz, 2017), which turned out to be not decisive when it comes to the purchase intention of meal-kits.

Furthermore, the findings are also different in comparison to the findings of Brunner et al. (2010). This could be due to the difference between the perception of convenience food and meal-kits. The reason why Brunner et al. (2010) found naturalness and nutrition knowledge to be the most important drivers for consumption, is because consumers perceived convenience food of being low-quality. Even though meal-kits are perceived as healthy, this did not turn out to be an important predictor for the purchase intention. So, this means that other predictors would be more important for the consumer when purchasing meal-kits.

Age

Surprisingly, the consumer characteristic age is not a predictor for the purchase intention of meal-kits. This is in contradiction with the literature because Brunner et al. (2010) found that the variable age was one of the strongest drivers for the consumption of convenience food. Apparently, this is not the case within the context of the purchase intention of meal-kits. This contrast between the findings could be due to the difference between convenience food and meal-kits. Even though both help the consumer minimize time as well as mental effort (Brunner, 2010; Contini, 2018), convenience food contains mostly ready-to-eat variants like frozen pizza for example (Brunner, 2010). This makes age a more straightforward linear predictor for convenience food because for example, younger consumers could be more willing to consume frozen pizzas, rather than older consumers.

However, meal-kits are less convenient since the consumers have to cook the meal from scratch (Hertz, 2017). So, it would take more effort to prepare the meal from a meal-kit

in comparison to convenience food alternatives, which makes it a more diverse product. Given this difference, predicting the purchase intention of meal-kits would be more complicated. It could be possible that there is no linear relationship between age and the purchase intention of meal-kits, but instead an inverted U-shaped effect (Cofer & Petri, 2005). This would entail that the effect of age on purchase intention has a certain point beyond which the effect changes. This could for example mean that the effect of age is negative for younger consumers, but becomes positive for adults. However, further research is needed to clarify this relationship. Thus, it can be concluded that the variable age is not a predictor for the purchase intention of meal-kits.

Price

Based on the results of this study, it was found that price does not determine the purchase intention of meal-kits. So apparently, the participants did not deem the price to be of most importance but were most likely led by other predictors that influenced their purchase intention.

One possible explanation of why this result is different from the literature could be due to the amount of convenience that is being offered. It is plausible that the participants were willing to accept either high or low prices for the meal-kits because it contains the extra convenience they want. This would be in line with the findings of Swoboda & Morschett (2001). However, the results could also be insignificant because the participants did not have a reference price beforehand. In this way, they could be not entirely sure if the price that was shown was either high or low in comparison to other providers. Nonetheless, even when accounted for the different types of meal-kits, the influence of price on purchase intention did not vary between these types of meal-kits. Thus, compared to the other findings in the literature, it can be concluded that the variable price does not influence the purchase intention of meal-kits.

Packaging

According to the results, transparent packaging is not an important predictor of purchase intention within the context of meal-kits. This finding contradicts the results of Ragaert et al. (2004), which showed that package transparency was deemed most important by consumers when making a purchase decision. One possible explanation of why this result differentiates from the literature could be due to the research design. During the research of Ragaert et al. (2004), participants were approached in the supermarket at the moment of making a purchase

decision. Within this thesis, an online experiment was conducted using pictures of meal-kits with transparent packaging and without transparent packaging. It might be the case that when consumers had the opportunity to physically observe the contents of the meal-kits, they would have indicated the purchase intention differently.

Besides the main effect of packaging on purchase intention, it was also expected that the effect of package transparency on purchase intention of meal-kits would differentiate depending on the type of meal-kit. According to the results, this moderation effect did not turn out to be present. This means that package transparency does not play a crucial role when it comes to the purchase intention of fresh packages or regular meal-kits. So based on these findings, it can be concluded that having transparent packaging does not affect the purchase intention of regular meal-kits or fresh packages.

Meal-kits

The hypothesized moderation effects of meal-kits did not turn out to be present in the model. However, it was found that the average purchase intention of fresh packages is higher than the purchase intention of regular meal-kits. A possible explanation for this finding could be that fresh packages are more familiar for the respondents, as opposed to regular meal-kits. After all, one-third of the Dutch households buy fresh meal packages sometimes, and almost 50% of the Dutch households indicated that they buy soup packages regularly (Jansen, 2018). So, assuming that respondents are familiar with the use of fresh packages, they could be more inclined to have a higher purchase intention towards fresh packages as opposed to regular meal-kits. Furthermore, it is also possible that the participants associated the regular meal-kits with variants like HelloFresh, even though it was explained in the experiment that the regular meal-kits represented supermarket meal-kits. This could have led to lower purchase intention scores because not every consumer might embrace the concept of getting their meal-kits delivered to their doorstep. So, based on this finding it can be concluded that the type of meal-kit does influence the purchase intention of meal-kits.

5.2 Managerial implications

Based on the findings of this research, the following managerial implications can be drawn. First of all, it appeared that the price does not influence the purchase intention of meal-kits. The prices that were used within this experiment were based on the current highest and lowest prices of different meal-kit providers in the market (Appendix C). Apparently, it did not matter to the consumers whether the meal-kit shown was expensive or cheap. For managers,

this would entail that the prices of meal-kits could be increased. However, it is suggested that preferably the prices of fresh packages should be increased since the purchase intention of the fresh packages were generally higher compared to the purchase intention of regular meal-kits. As for the price itself, it is recommended not to exceed the most expensive price within the price range of the meal-kits. This is because prices outside this range were not included in this research and it is therefore unknown what the effects on purchase intention would be outside of those ranges.

Furthermore, this research also has shown that the transparency of packaging does not influence the purchase intention of meal-kits. Based on this finding it is suggested that managers are free to alter the packaging of meal-kits, even if the packaging becomes less transparent. For example, if the packaging of meal-kits has to be changed in the near future due to ecological reasons for instance, then the transparency of the packaging should not be of utmost importance.

Additionally, the results of this research have shown that the purchase intention of fresh packages is generally higher in comparison to regular meal-kits. This finding is in line with the increasing sales of fresh packages (ZON magazine, 2018; Jansen, 2018). For this reason, it is recommended to keep developing these fresh packages. Since the number of choice options for fresh packages is limited (Cammelbeeck, 2019), it would be sensible to expand the fresh packages line with different kind of meals. By doing this, fresh packages can further compete with the regular meal-kits which already have a broad range of different meals to pick from (Maaltijdbox, 2020). Furthermore, even though the regular meal-kits contain all the ingredients needed, this did not increase the purchase intention of regular meal-kits over fresh packages. This would imply that the fresh packages do not necessarily need to contain all the ingredients that are needed for a single meal. So ingredients like fresh meat could still be left out of these packages in the future.

Also, it is recommended for managers to target a broad audience when it comes to meal-kits. The reason for this is that no particular influence is found of health awareness on the purchase intention of meal-kits. This would imply that meal-kits are not bought exclusively by consumers who are concerned about eating healthy. Therefore, meal-kits providers do not have to limit their target audience to consumers who engage in healthy behaviors. Furthermore, the consumer characteristic age did not influence the purchase intention of meal-kits. For this reason it is also advisable to keep a broad target audience. Yet, it should be noted that according to Hertz (2017), adults tend to get stuck in dinner routines, and buy meal-kits in order to get more inspiration for cooking meals. So even though age did

not reach significance in this thesis, it should still be logical to mainly target families or couples rather than the very young age category of 18 years old.

5.3 Limitations and future research

This current study has some potential limitations. The results show that almost every effect on the purchase intention of meal-kits is not significant, except for the type of meal-kits. The insignificant effects could be due to a number of causes.

First of all, it could be due to a small sample size. If the sample size is too small, it could be harder to detect an effect and hence lead to non-significant results (Field, 2018). However, according to Field (2018), a sample size of 100 cases should be sufficient to find an effect when the number of predictors in the model is less than six. Within this study, five predictors were used. So based on this knowledge, a sample size of $N = 114$ should be sufficiently large enough for this study to find significant effects. Therefore, the sample size would not be a direct cause for the non-significant effects within the model.

One more possible explanation of the insignificant results is aimed at the predictors that were used in this study. There might be outside or unknown factors that explain the dependent variable purchase intention, but were not included in the model. These factors are also called extraneous variables (Hair, 2018; McLeod, 2019). Within this research, the most important predictors were determined based on the current literature concerning the purchase intention of convenient food and organic food. The reason why these kinds of literature were used, is because the academic literature concerning meal-kits is limited. Consequently, it could be possible that when it comes to the purchase intention of meal-kits, other factors are considered more important than these selected predictors. Hence, there is a chance that certain essential predictors for the purchase intention of meal-kits were not present in the model and caused the results to be not significant.

Since it is possible that extraneous variables explain the insignificant effects in this study, it is important to reflect on what kind of variables could have predicted the purchase intention of meal-kits more accurately. One of the reasons why consumers buy meal-kits could be because of the amount of convenience it provides (Miles, 2018; Hielkema, n.d.). One element that could be related to the amount of convenience is cooking skills (Brunner, 2010). Brunner et al. (2010) hypothesized that cooking skills negatively influences the consumption of convenience food. Since meal-kits do require time and effort because a particular recipe needs to be followed (Hertz, 2017), cooking skills could possibly have an influence on the amount of perceived convenience. For example, it could be possible that if someone has low

cooking skills, he or she would find it less convenient to prepare a meal according to the meal-kits recipe because it would take too much time or troubles. Therefore, this person could have a low purchase intention towards meal-kits.

Another possible extraneous variable that is related to convenience, is the mental effort (Contini, 2018). Meal-kits reduce the amount of mental effort that is needed to prepare the meal since it contains a recipe that needs to be followed (Hertz, 2017). Recent empirical research shows that one of the reasons why consumers buy fresh packages is because of their lack of inspiration (Hielkema, n.d.). So the lack of inspiration of consumers could lead to the intention to purchase meal-kits since meal-kits provide the consumer with a recipe. In this way, the consumer is relieved from the burden to exert mental effort in order to come up with a meal plan. For these reasons mentioned above, there is a possibility that the convenience factors cooking skills and mental effort could have an effect on the purchase intention of meal-kits. Therefore, it is recommended for future research to focus on these two factors.

Another potential limitation of this research could be related to the research design. Participants were asked to fill in their purchase intention scores based on a meal-kit shown in a picture. Within this picture, three factors were manipulated: price, meal-kit type, and packaging. Since the results have shown that these variables do not predict the purchase intention of meal-kits, it is hard to speculate which variables could have had an influence. The reason for this is that the experiment did not contain follow up questions on the participants' opinions about the variable price for example. So a disadvantage of this is that the true reasoning behind the given purchase intention scores cannot be retrieved. Therefore, it is recommended for future research to focus more on the details about the opinion of consumers on the different factors of the meal-kits. There should be a possibility where participants can declare their purchase intention ratings. By doing this, more clarification will be gained on the true reasoning behind why consumers were intended to buy a meal-kit or not.

Another limitation in this research is that all the variables are directly linked to purchase intention and there is not explicitly controlled for product attributes. The reason for this was to keep the research feasible within the given timespan. One could question whether linking the variables to product attributes first, would be more logical and give a better prediction for the purchase intention. Therefore, it could be useful for future research to use a similar setup as is done by Lee & Yun (2015). In their research, they showed that consumers' perceptions of food attributes influence their attitudes, leading to the intention to purchase organic food (Lee, 2015). Thus, it is recommended for future research to expand the

conceptual model with product attributes because this will generate a more detailed explanation of consumers' purchase intention towards meal-kits.

Furthermore, an additional limitation could be due to the sample characteristics that were used in this study. The participants were completely selected at random, without any restrictions. Almost half of the participants turned out to be between the age of 18 and 25 years old, and are therefore most likely students. Students can either live on their own or still live at their parents' home. Hence, it could be possible that a proportion of the sample did not feel the need to buy a meal-kit at all, because it does not apply to their situation. So, the external validity of this research could have been affected by the non-restricted sample size. Therefore, it is recommended for future research to select a specific representative sample of participants. This could be done for example by approaching consumers of a specific supermarket who purchase meal-kits regularly. Some supermarkets can track their consumers' purchase behavior using so-called bonus cards (Ah, 2020). Using the data generated by these cards, it could be tracked down who purchases meal-kits. By selecting participants based on this data, a more representative sample can be drawn and will therefore increase the external validity.

Despite these limitations, this research contributes to the existing body of knowledge concerning consumer behavior and food. The results give reasons to believe that the predictors of purchase intention of meal-kits are substantially different when compared to other forms of food, like organic food and convenience food. However, future research is needed to confirm these findings and should further reveal which predictors are deemed most important when it comes to the purchase intention of meal-kits.

References

- Ah. (2020). *Haal meer uit je bonuskaart*. Retrieved from <https://www.ah.nl/bonuskaart>
- Ah. (n.d.). *AH Italiaanse lasagne verspakket* [Online catalogus]. Retrieved from: <https://www.ah.nl/producten/product/wi226973/ah-italiaanse-lasagne-verspakket>
- Ah-boodschappen. (n.d.). *AH-boodschappen* [Online catalogus]. Retrieved from: <https://www.ah-boodschappen.nl/catalogus/zoeken/verspak>
- Albert Heijn. (2018, February, 25). *Albert Heijn Parkwijk Almere* [Facebook]. Retrieved from: <https://www.facebook.com/ahparkwijk/posts/1846827102003796/>
- Allerhande. (2020). *Wat eten we vandaag?* Retrieved from: <https://www.ah.nl/allerhande>
- Ampuero, O., & Vila, N. (2006). Consumer perceptions of product packaging. *Journal of Consumer Marketing*, 23(2), 100–112.
- Andersen, A. H. (2011). Organic food and the plural moralities of food provisioning. *Journal of Rural Studies*, 27, 440-450.
- Ares, G., Giménez, A., and Gámbaro, A. (2008). Influence of nutritional knowledge on perceived healthiness and willingness to try functional foods, *Journal of Appetite*, 51, 663-668.
- Badr, W. (2019, January 5). 6 Different ways to compensate for missing values in a dataset (Data imputation with examples). Retrieved from: <https://towardsdatascience.com/6-different-ways-to-compensate-for-missing-values-data-imputation-with-examples-6022d9ca0779>
- Bruner, G.C. (2012). *Marketing scales handbook: a compilation of multi-item measures for consumer behavior & advertising research* (Volume 6). [Ebook Central], Fort Worth, USA: GCBII Productions.
- Bruner, G.C. (2019). *Marketing scales handbook: Multi-Item Measures for Consumer Insight Research* (Volume 10). [Ebook Central], Fort Worth, USA: GCBII Productions.
- Brunner, T., van der Horst, K., and Siegrist, M. (2010). Convenience food products. Drivers for consumption, *Journal of Appetite*, 55, 498-506.
- Brunner, T. (2012). Matching effects on eating. Individual differences do make a difference! *Journal of Appetite*, 58, 429–431.
- Budiu, R. (2018, May 13). Between-Subjects vs. Within Subjects Study Design. Retrieved from: <https://www.nngroup.com/articles/between-within-subjects/>
- Billeter, D., Zhu, M., & Inman, J. J. (2012). Transparent packaging and consumer purchase decisions. In J. Sevilla (Ed.), *When it's what's outside that matters: Recent findings on*

- product and packaging design. Paper presented at Association for Consumer Research 2012 Conference, Vancouver, Canada (pp. 308–312).
- Cammelbeeck, T. (2019, December 6). Met een eigen twist nog gezonder: flink wat groente. Retrieved from:
<https://www.consumentenbond.nl/binaries/content/assets/cbhippowebsite/gidsen/gezondgids/2019/nummer-6---december/ng201912p08-verse-maaltijdpakketten-p.pdf>
- Chandon, Pierre and Brian Wansink (2007), “Is Obesity Caused by Calorie Underestimation? A Psychophysical Model of Meal Size Estimation,” *Journal of Marketing Research* , 44, 84-99.
- Clement, J. (2007). Visual influence on in-store buying decisions: an eye-track experiment on the visual influence of packaging design. *Journal of Marketing Management*, 23, 917-928.
- Cofer, C.N., & Petri, H.L. (n.d.). *Psychology & Mental health* [Encyclopedia]. Retrieved from: <https://www.britannica.com/topic/motivation>
- Contini, C., Boncinelli, F., Gerini, F., Scozzafava, G., and Casini, L. (2018). Investigating the role of personal and context-related factors in convenience food consumption, *Journal of Appetite* 126, 26-35.
- Conway, J. (2019). *Global number of orders from HelloFresh from 2016 to 2018, by quarter*. Retrieved from: <https://www.statista.com/statistics/948050/hellofresh-number-of-orders-worldwide-quarter/>
- Coop. (n.d.). *Verspakket lasagna* [Online catalogus]. Retrieved from:
<https://www.coop.nl/verspakket-lasagne/product/8711578576041>
- Damari, Y., Kissinger, M. (2018). Quantity-based analysis of household food consumption patterns and drivers: The case of Israel. *Journal of Appetite*, 127, 373-385.
- Deen. (n.d.). *Verspakketten* [Online catalogus]. Retrieved from:
<https://www.deen.nl/boodschappen/groente-en-aardappels/verspakketten>
- Demartini, E., De Marchi, E., Cavaliere, A., Mattavelli, S., Gaviglio, A., Banterle, A., Richetin, J., and Perugini, M. (2019), Changing attitudes towards healthy food via self-association or nutritional information: What works best? *Journal of Appetite*, 132, 166-174.
- DissertationLaerd. (2012). *Principles of research ethics*. Retrieved from:
<http://dissertation.laerd.com/principles-of-research-ethics.php#second>

- Distrifood. (2018). *Allerhande Box gaat van doos naar zak*. Retrieved from:
<https://www.distrifood.nl/vers/nieuws/2018/05/allerhande-box-gaat-van-doo-naar-zak-101116980>
- East, R., Singh, J., Wright, M. & Vanhuele, M. (2017). *Consumer behavior*, 3rd edition. Sage: London.
- Fasolo, B., Misuraca, R. and McClelland, G. H. (2003), "Individual differences in adaptive choice strategies", *Research in Economics*, 57, 219-233.
- Field, A. (2018). *Discovering statistics using IBM SPSS statistics*, 5th edition. Sage: London.
- Foodboxen. (2020). *Maaltijdboxen vergelijken*. Retrieved from:
<https://www.foodboxen.nl/maaltijdboxen/>
- Foodboxwijzer. (2020). *AH Allerhande Box*. Retrieved from:
<https://www.foodboxwijzer.nl/ah-allerhande/ah-allerhande-box/>
- Grebitus, C., Steiner, B., Veeman, M. (2015). The roles of human values and generalized trust on stated preferences when food is labeled with environmental footprints: Insights from Germany. *Journal of Food Policy*, 52, 84-91.
- Grewal, D., Roggeveen, A., and Nordfält, J. (2017). The Future of Retailing, *Journal of Retailing* 93, 1-6.
- Grunert, K. G. (2003). Convenience food. In L. Holm, & S. T. Kristensen (Eds.), *Mad, Mennesker og Måltider* (2nd ed. 2012). Copenhagen: Munksgaard.
- Hair, J.F., Black, W.C., Babin, B.J., Anderson, R.E. (2014). *Multivariate Data Analysis: Pearson New International Edition*, 7th edition. Pearson Education Limited: Harlow.
- Halkier, B. (2014). Getting along with pizza-fication? The expectable and acceptable place of convenience food in everyday life among young Danes. *Nordic Conference of consumer research*.
- Hansen, T., Sørensen, M. I., Eriksen, M. L. R. (2018). How the interplay between consumer motivations and values influences organic food identity and behavior. *Journal of Food Policy*, 74, 39-52.
- Heard, R., Bandekar, M., Vassarc, B., and Millera, A. (2019). Comparison of life cycle environmental impacts from meal kits and grocery store meals, *Journal of Resources, Conservation & Recycling*, 147, 189-200.
- Hellofreshgroup (n.d.) HelloFresh is the leading global provider of fresh food at home. Retrieved from:
<https://www.hellofreshgroup.com/websites/hellofresh/English/110/who-we-are.html>

- Hellofresh. (2020). Zin in HelloFresh. Retrieved from: https://www.hellofresh.nl/?c=8Q-9TD7S&dis=communication_one&gclid=Cj0KCQjw09HzBRDrARIsAG60GP_C_49hg8luhVBzsxzOrvIvgmTTE8dz-WZRfPKJu5tJsveniTBGKIAaArQCEALw_wcB&locale=nl-NL
- Hertz, F., Halkier, B. (2017). Meal box schemes a convenient way to avoid convenience food? Uses and understandings of meal box schemes among Danish consumers, *Journal of Appetite* 114, 232-239.
- Hielkema, R. (n.d.). Verspakketten razend populair [Blog]. Retrieved from: <https://www.motivaction.nl/kennisplatform/nieuws-en-persberichten/verspakketten-razend-populair>
- Inman, J., Nikolova, H. (2017). Shopper-Facing Retail Technology: A Retailer Adoption Decision Framework Incorporating Shopper Attitudes and Privacy Concerns, *Journal of Retailing* 93, 7-28.
- Iyengar, S. S. and Lepper, M. R. (2000), "When choice is demotivating: Can one desire too much of a good thing?" *Journal of Personality and Social Psychology*, 79, 995-1006.
- Jackson, P., Viehoff, V. (2015). Reframing convenience food, *Journal of Appetite*, 98, 1-11.
- Jansen, R. (2018, October 25). Verse maaltijdpakketten groeien in populariteit. Retrieved from: <https://www.distrifood.nl/vers/nieuws/2018/10/verse-maaltijdpakketten-groeien-in-populariteit-101119774>
- Jumbo. (n.d.). *Jumbo maaltijdpakket lasagna 1,2 kg* [Online catalogus]. Retrieved from: <https://www.jumbo.com/jumbo-maaltijdpakket-lasagne-1,-2kg/197728PAK>
- Koutsimanis, G., Getter, K., Behe, B., Harte, J., and Almenar, E. (2012). Influences of packaging attributes on consumer purchase decisions for fresh produce. *Journal of Appetite*, 59, 270-280.
- Kraft, F.B., & Goodell, P.W. (1993). Identifying the health conscious consumer. *Journal of Marketing Health Services*, 10, 18-25.
- Lane, D.M. (n.d.). Experimental designs. Retrieved from: http://onlinestatbook.com/2/research_design/designs.html
- Lee, H-J., & Yun, Z-S. (2015). Consumers' perceptions of organic food attributes and cognitive and affective attitudes as determinants of their purchase intentions towards organic food. *Journal of Food Quality and Preference*, 39, 259-267.
- Lidl. (n.d.). *Special délicieux pasen* [Online folder]. Retrieved from: <https://www.lidl.nl/folders/special-delicieux-pasen-2020/view/flyer/page/68>

- Lindemann, N. (2019, August, 8). *What's the average survey response rate?* Retrieved from <https://surveyanyplace.com/average-survey-response-rate/>
- Maaltijdbox. (n.d.). *Verspakket*. Retrieved from: <https://www.maaltijdbox.net/verspakket/>
- Maaltijdbox. (n.d.). *Allerhande Box Ervaringen*. Retrieved from: <https://www.maaltijdbox.org/ah-allerhande-box/allerhande-box-ervaringen/>
- Maaltijdbox. (2019, June, 12). *Allerhande box verspakketten in de supermarkt verkrijgbaar*. Retrieved from: <https://www.maaltijdbox.net/nieuws/allerhande-box-verspakketten-in-de-supermarkt-verkrijgbaar/>
- Massey, M., O'Cass, A., Otahal, P. (2018). A meta-analytic study of the factors driving the purchase of organic food. *Journal of Appetite*, 125, 418-427.
- McLeod, (2019). *Extraneous Variable*. Retrieved from: <https://www.simplypsychology.org/extraneous-variable.html#:~:text=Extraneous%20variables%20are%20all%20variables,effect%20on%20the%20dependent%20variable.>
- Miles, K. (2018, October 3). Top drivers of meal kit adoption [Blog]. Retrieved from: <https://gobranded.com/branded-poll-top-drivers-of-meal-kit-adoption/>
- Moorman, C. & Matulich, E. (1993). A model of consumers' preventive health behaviors: the role of health motivation and health ability. *Journal of Consumer Research*, 20, 208-228.
- Muijs, D. (2011). *Doing Quantitative Research in Education with SPSS*, 2nd edition. Sage: London.
- Myers, M.D. (2013). *Qualitative Research in Business & Management*, 2nd edition. Sage: Los Angeles.
- Narayanan, M., Loganathan, S., Valapa, R. B., Thomas, S., & Varghese, T. O. (2017). UV protective poly(lactic acid)/rosin films for sustainable packaging. *International Journal of Biological Macromolecules*, 99, 37-45.
- Newsom, J.T., McFarland, B.H., Kaplan, M.S., Huguet, N., & Zani, B. (2005). The health consciousness myth: Implications of the near independence of major health behaviors in the North American population. *Journal of Social Science & Medicine*, 60, 433-437.
- Packagedfacts. (n.d.). The Meal Kit Delivery Services Market. Retrieved from: <https://www.packagedfacts.com/Content/Featured-Markets/Meal-Kit-Delivery-Services>
- Paul, J., Rana, J. (2012). Consumer behavior and purchase intention for organic food. *Journal of Consumer Marketing*, 29, 412-422.

- Plus. (n.d.). *Verse maaltijdpakketten* [Online Catalogus]. Retrieved from <https://www.plus.nl/producten/aardappelen-groente-fruit/verse-maaltijdpakketten>
- Prim, M., Gustafsson, I.-B., & Hall, G. (2007). The appropriateness of ready meals for dinner. *Journal of Foodservice*, 18, 238-250.
- Qualtrics, (n.d.). *Back to Business. With confidence*. Retrieved from: <https://www.qualtrics.com/>
- Ragaert, P., Verbeke, W., Devlieghere, F., & Devereure, J. (2004). Consumer perception and choice of minimally processed vegetable and packaged fruit. *Journal of Food Quality and Preference*, 15(3), 259–270.
- Riley, D., Da Silva, P.M., Behr, S. (2015). *The impact of packaging design on health product perceptions*. Retrieved from: https://www.researchgate.net/publication/280569981_The_Impact_of_Packaging_Design_on_Health_Product_Perceptions
- Sauro, J. (2015, Augst 25). Comparing between and within subjects studies. Retrieved from: <https://measuringu.com/between-within/>
- Scholliers, P. (2015). Convenience foods. What, why, and when, *Journal of Appetite*, 94, 2-6.
- Sekaran, U., & Bougie, R. (2016). *Research methods for business: a skill-building approach* (7th edition). Chichester, United Kingdom: John Wiley & Sons.
- Statisticssolutions. (2020). Sample Size Formula. Retrieved from: <https://www.statisticssolutions.com/sample-size-formula/>
- Swoboda, B., & Morschett, D. (2001). Convenience-oriented shopping. A model from the perspective of consumer research. In L. Frewer, E. Riskvik, & H. Schifferstein (Eds.), *Food, people and society. A European perspective of consumers' food choices* (pp. 177– 196). Berlin: Springer
- Simmonds, G., Spence, C. (2017). Thinking inside the box: how seeing products on, or through, the packaging influences consumer perceptions and purchase behavior. *Journal of Food Quality and Preference*, 62, 340-351.
- Sioutis, T. (2011). *Effects of package design on consumer expectations of food product healthiness*. (Master's thesis). Retrieved from <https://www.scribd.com/doc/74326204/Effects-of-Package-Design-on-Consumer-Expectations-of-Food-Product-Healthiness>
- Szabo, M. (2011). The challenges of “Re-engaging with Food”. Connecting employment, household patterns and gender relations to convenience food consumption in North America. *Journal of Food, Culture & Society*, 14, 547-566

- Verbeke, W. (2005). Consumer acceptance of functional foods: Socio-demographic, cognitive and attitudinal determinants. *Food Quality and Preference*, 16, 45–57.
- Vlijtig, L. (2019, 17 January). Lidl verspakket voor groene curry: review [Blog]. Message posted on <https://www.huisvlijt.com/lidl-verspakket-voor-groene-curry-review/>
- Wansink, B. (2004). Environmental factors that increase the food intake and consumption volume of unknowing consumers. *Annual Review of Nutrition*, 24, 455–479.
- Yeo, V.C.S., Goh, S-K. & Rezaei, S. (2017). Consumer experiences, attitude and behavioral intention toward online food delivery (OFD) services. *Journal of Retailing and Consumer Services*, 35, 150-162.
- ZON magazine (2018, April 30), ZON en Unilever breiden aantal verspakketten uit. Retrieved from <https://www.groentennieuws.nl/article/173164/zon-en-unilever-breiden-aantal-verspakketten-uit/>.
- Zúñiga, M.A. (2016), African American Consumers' Evaluations of Ethnically Primed Advertisements. *Journal of Advertising* , 45 (1), 94-101.

Appendix

Appendix A: Scenarios

The following general explanation will be provided to the participant, depending on the type of meal-kit that is shown:

The number of different meal-kits or meal boxes are growing in popularity these days. Meal-kit providers like HelloFresh and the Allerhande box are examples of one of these meal-kits. Within this research, the focus lies on two different meal-kits. On the one hand the “regular” meal-kit boxes, which contain premeasured fresh food items for one meal along with a particular recipe that needs to be followed in order to prepare the meal. So in this case, all the ingredients are present and no additional ingredients have to be gathered. Subsequently, no monthly subscription is needed in order to purchase this meal-kit, and the number of meal options changes every week.

On the other hand, there are “fresh packages”. The fresh package is a much smaller variant than the boxes and consists of fresh ingredients for one meal. However, the difference is that the number of ingredients within these meal-kits is oftentimes not fully complete. Additional ingredients, such as meat for example need to be purchased separately. In addition, the number of meal options for fresh packages are limited. In sum:

Regular meal-kit box

- Contains all the ingredients for one meal;
- Meal options change every week;
- No monthly subscription.

Fresh packages

- Smaller variant;
- Does not contain all the ingredients needed for one meal;
- Amount of meal options is limited.

For now, the regular meal-kit boxes are denoted with a square, and the fresh packages are represented by a triangle. In practice, these are going to be real pictures of meal-kits.

Scenario 1a

Within this scenario one regular meal-kit box is shown (Distrifood, 2018), which is not-transparent. The price is set at low. The participant has to indicate the purchase intention for this meal-kit.



Regular meal-kit (Distrifood, 2018).

Scenario 1b

This scenario contains a regular meal-kit which is transparent (Albert Heijn, 2018). The price is set at high. The participant has to indicate the purchase intention of this meal-kit.



Regular meal-kit (Albert Heijn, 2018).

Scenario 2a

In this scenario, a regular meal-kit is shown (Distrifood, 2018), which is not transparent. The price is set at high. The participant has to indicate the purchase intention of the meal-kit.



Regular meal-kit (Distrifood, 2018).

Scenario 2b

The next scenario also depicts a regular meal-kit box (Albert Heijn, 2018). In this case, the meal-kit is transparent. The price is set at low. The participant has to indicate the purchase intention of the meal-kit.



Regular meal-kit (Albert Heijn, 2018).

Scenario 3a

This time, the focus lies on price. One fresh package is shown (Jumbo, n.d.), which is set at a low price. The participant has to indicate the purchase intention of the meal-kit.



Fresh package (Jumbo, n.d.).

Scenario 3b

One transparent fresh package is shown (Coop, n.d.), which is set at a high price. The participant has to indicate the purchase intention of the meal-kit.



Fresh package (Coop, n.d.).

Scenario 4a

In this scenario, one fresh package is shown (Jumbo, n.d.), which is set at a high price. The participant has to indicate the purchase intention of the meal-kit.



Fresh package (Jumbo, n.d.).

Scenario 4b

Lastly, in scenario 8 a transparent fresh package will be set at a low price (Coop, n.d.). The participant has to indicate the purchase intention of the meal-kit.



Fresh package (Coop, n.d.).

Appendix B: Survey questions

Health awareness

The scale consists of five items in total, which are based on a 5-point Likert scale.

Items:

I watch what I eat.

☐ ☐ ☐ ☐ ☐
Strongly disagree Disagree Undecided Agree Strongly agree

I pay attention to what I eat.

☐ ☐ ☐ ☐ ☐
Strongly disagree Disagree Undecided Agree Strongly agree

I pay attention to how much I eat.

☐ ☐ ☐ ☐ ☐
Strongly disagree Disagree Undecided Agree Strongly agree

Eating healthy is important to me.

☐ ☐ ☐ ☐ ☐
Strongly disagree Disagree Undecided Agree Strongly agree

Nutritional information influences me.

☐ ☐ ☐ ☐ ☐
Strongly disagree Disagree Undecided Agree Strongly agree

Age

Age will be a continuous variable, which means that age will not be defined in different categories beforehand. The question will be:

What is your age?

Purchase intention

The scale consists of five items and are based on seven-point semantic differentials. The scale items are presented below.

Items:

Indicate your purchase intention of the shown meal-kit below.

Would you be willing to try the meal-kit?

Would not try ☐ ☐ ☐ ☐ ☐ ☐ ☐ Would try

Would you be willing to seek out more information about this product?

Would not seek out ☐ ☐ ☐ ☐ ☐ ☐ ☐ Would seek out

How likely is it that you are willing to try this meal-kit?

Not very likely ☐ ☐ ☐ ☐ ☐ ☐ ☐ Very likely

How probable is it that you are going to try to this meal-kit?

Improbable ☐ ☐ ☐ ☐ ☐ ☐ ☐ Probable

Would you be willing to consider the meal-kit?

Would not consider ☐ ☐ ☐ ☐ ☐ ☐ ☐ Would consider

Other demographic information

These last questions will be asked in order to get an overview of the descriptive statistics of the sample:

What is your gender?

What is your highest level of education?

Appendix C: Prices fresh packages & regular meal-kits

In the table below, the prices are given of the fresh packages. The sources from these prices are presented in the footnotes below. Since the prices of the means are pretty close to each other, the decision is made to take the lowest and highest price found among the different meal-kit providers. By doing this, a more clear cut difference can be established between a really high price and a really low price.

<u>Provider</u>	<u>Lowest price</u>	<u>Highest price</u>
Plus ¹	€ 4,50	€ 5,15
Deen ²	€ 5,00	€ 5,00
Coop ³	€ 4,69	€ 4,79
Lidl ^{4,5}	€ 3,50	€ 3,99
AH ⁶	€ 3,49	€ 4,99
MEAN	€ 4,24	€ 4,78

¹ <https://www.plus.nl/producten/aardappelen-groente-fruit/verse-maaltijdpakketten>

² <https://www.deen.nl/boodschappen/groente-en-aardappels/verspakketten>

³ <https://www.coop.nl/zoeken/?SearchTerm=verspakket>

⁴ <https://www.huisvlijt.com/lidl-verspakket-voor-groene-curry-review/>

⁵ <https://www.lidl.nl/folders/special-delicieux-pasen-2020/view/flyer/page/68>

⁶ <https://www.ah-boodschappen.nl/catalogus/zoeken/verspak>

For the regular meal-kit boxes the prices are as follows ^{7,8}. Here, the mean is calculated for the price per meal.

<u>Provider</u>	<u>Lowest price</u>	<u>Highest price</u>
Allerhandebox	€ 10,23	€ 12,95
HelloFresh	€ 13,65	€ 20,65
Marley Spoon	€ 13,98	€ 20,98
Familiebox	€ 13,83	€ 19,00
DeKrat	€ 13,66	€ 20,66
MEAN	€ 13,07	€ 18,85

Appendix D: Assumptions and correlations

<i>Variable</i>	<i>B</i>	<i>Standard Error</i>	<i>Standardized coefficients Beta</i>	<i>t-value</i>	<i>Sig.</i>	<i>Tolerance</i>	<i>VIF</i>
(Constant)	3.20	0.50		6.33	0.00		
Packaging ^a	0.07	0.31	0.02	0.22	0.83	0.97	1.02
Price ^b	-0.26	0.31	-0.08	-0.84	0.40	0.97	1.02
Fresh package ^c	0.57	0.33	0.17	1.71	0.09	0.83	1.21
Age	0.01	0.01	0.07	0.67	0.50	0.79	1.26
Health awareness_CEN	0.68	0.52	0.25	1.33	0.18	0.24	4.21
Health awareness_CEN2	-0.16	0.35	-0.05	-0.47	0.63	0.90	1.11
Health awareness_CEN3	-0.69	0.47	-0.28	-1.45	0.15	0.23	4.35

Coefficients polynomials Health Awareness

^a = Reference category is non-transparent packaging

^b = Reference category is low price

^c = Reference category is regular meal-kit

⁷ <https://www.foodboxen.nl/maaltijdboxen/>

⁸ <https://www.foodboxwijzer.nl/ah-allerhande/ah-allerhande-box/>

		<i>Purchase intention</i>	<i>Packaging</i>	<i>Price</i>	<i>Fresh package</i>	<i>Age</i>	<i>HA_ CEN</i>	<i>HA_ CEN 2</i>	<i>HA_ CEN 3</i>
Pearson Correlation	Purchase Intention	1.00	0.04	-0.09	0.20	0.14	0.03	-0.02	-0.04
	Packaging	0.04	1.00	0.02	-0.02	0.09	-0.04	-0.00	-0.09
	Price	-0.09	0.02	1.00	0.02	0.01	-0.06	0.03	0.00
	Fresh package	0.20	-0.02	0.02	1.00	0.41	0.01	-0.02	0.01
	Age	0.14	0.09	0.01	0.41	1.00	0.16	-0.11	0.16
	HA_CEN	0.03	-0.04	-0.06	0.01	0.16	1.00	-0.05	0.86
	HA_CEN2	-0.02	-0.00	0.03	-0.02	-0.11	-0.05	1.00	-0.19
	HA_CEN3	-0.04	-0.09	0.00	0.01	0.16	0.86	-0.19	1.00

Correlations including Health Awareness polynomials

<i>Variable</i>	<i>B</i>	<i>Standard Error</i>	<i>Standardiz ed coefficients Beta</i>	<i>t-value</i>	<i>Sig.</i>	<i>Tolerance</i>	<i>VIF</i>
(Constant)	2.77	1.15		2.41	0.02		
Packaging ^a	0.10	0.31	0.03	0.33	0.74	0.96	1.04
Price ^b	-0.29	0.31	-0.09	-0.96	0.34	0.99	1.01
Fresh package ^c	0.71	0.35	0.21	2.01	0.05	0.76	1.30
Health awareness	0.06	0.26	0.02	0.25	0.79	0.95	1.05
Age_CEN	-0.01	0.03	-0.06	-0.29	0.77	0.19	5.22
Age_CEN2	0.00	0.00	0.22	1.00	0.32	0.17	5.75
Age_CEN3	0.00	0.00	-0.06	-0.18	0.85	0.09	10.93

Coefficients polynomials Age

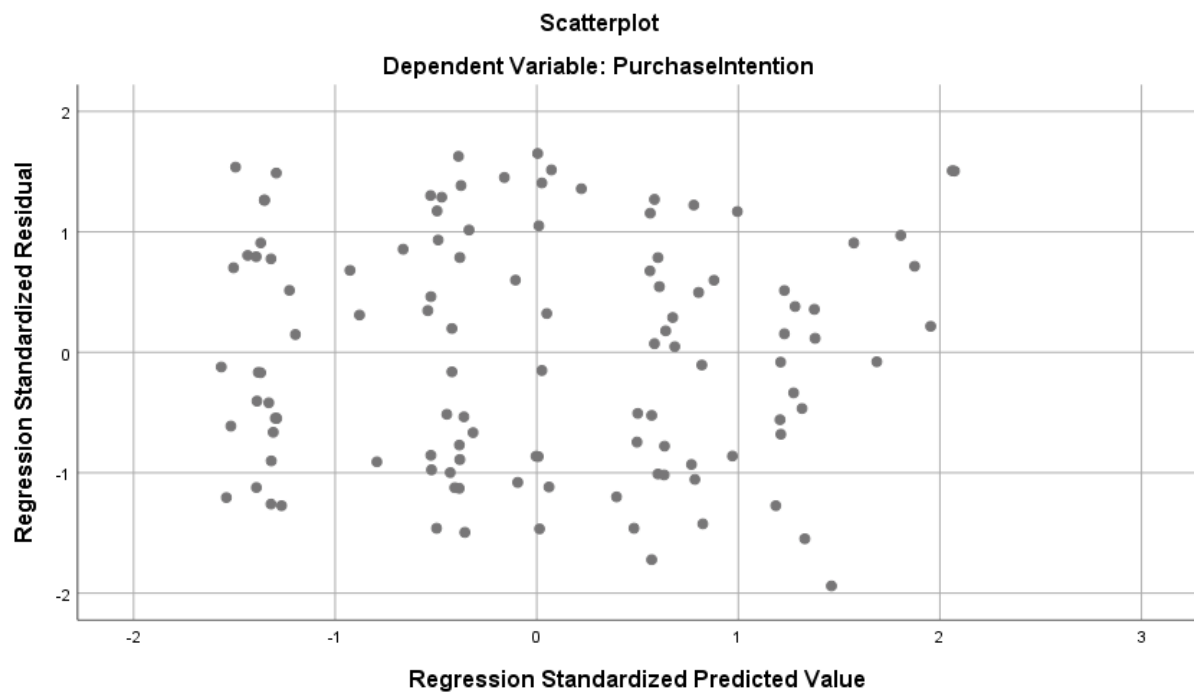
^a = Reference category is non-transparent packaging

^b = Reference category is low price

^c = Reference category is regular meal-kit

		<i>Purchase intention</i>	<i>Packaging</i>	<i>Price</i>	<i>Fresh package</i>	<i>Health awareness</i>	<i>Age_ CEN</i>	<i>Age_ CEN 2</i>	<i>Age_ CEN 3</i>
Pearson Correlation	Purchase Intention	1.00	0.04	-0.09	0.20	0.03	0.14	0.16	0.15
	Packaging	0.04	1.00	0.02	-0.02	-0.04	0.09	0.13	0.16
	Price	-0.09	0.02	1.00	0.02	-0.06	0.01	-0.03	-0.00
	Fresh package	0.20	-0.02	0.02	1.00	0.01	0.41	0.13	0.24
	Health awareness	0.03	-0.04	-0.06	0.01	1.00	0.16	0.07	0.13
	Age_CEN	0.14	0.09	0.01	0.41	0.16	1.00	0.73	0.87
	Age_CEN2	0.16	0.13	-0.03	0.13	0.07	0.73	1.00	0.90
	Age_CEN3	0.15	0.16	-0.00	0.24	0.13	0.87	0.90	1.00

Correlations including Age polynomials



Scatterplot

Appendix E: Reliability analysis

Health Awareness

Cronbach's Alpha	Cronbach's Alpha based on standardized items	N of items
0.763	0.774	5

Reliability statistics Health Awareness

	Scale Mean if item Deleted	Scale variance if item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if item deleted
I watch what I eat.	15.30	6.81	0.46	0.36	0.742
I pay attention to what I eat.	15.20	6.66	0.62	0.46	0.699
I pay attention to how much I eat.	15.55	6.58	0.47	0.28	0.740
Eating healthy is important to me.	15.27	6.73	0.54	0.35	0.718
Nutritional information influences my purchase decision.	15.94	4.91	0.62	0.43	0.697

Item-Total Statistics Health Awareness

Purchase Intention

Cronbach's Alpha	Cronbach's Alpha based on standardized items	N of items
0.950	0.950	5

Reliability statistics Purchase Intention

	Scale Mean if item Deleted	Scale variance if item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if item deleted
Would you be willing to try the meal-kit?	14.24	43.54	0.90	0.83	0.930
Would you be willing to seek out more information about this product?	14.75	47.65	0.71	0.51	0.963
How likely is it that you are willing to try this product?	14.47	42.48	0.93	0.89	0.926
How probable is it that you are going to try this meal-kit?	14.75	44.15	0.91	0.86	0.930
Would you be willing to consider the meal-kit?	14.62	43.51	0.86	0.77	0.938

Item-Total Statistics Purchase Intention

Appendix F: Skewness and kurtosis

<u>Variables</u>	<u>Skewness</u>		<u>Kurtosis</u>		<u>Skewness/SE</u>	<u>Kurtosis/SE</u>
	<i>Statistic</i>	<i>Standard error</i>	<i>Statistic</i>	<i>Standard error</i>	<u>skewness</u>	<u>kurtosis</u>
Age	0.69	0.23	-1.09	0.45	3.09	-2.44
Purchase Intention	0.06	0.23	-1.12	0.45	0.27	-2.66
Health Awareness	-0.06	0.23	-0.40	0.45	-2.78	-0.90

Skewness and kurtosis statistics

<u>Variables</u>	<u>Skewness</u>		<u>Kurtosis</u>		<u>Skewness/SE</u>	<u>Kurtosis/SE</u>	<u>Improvement?</u>
	<i>Statistic</i>	<i>Standard error</i>	<i>Statistic</i>	<i>Standard error</i>	<u>skewness</u>	<u>kurtosis</u>	
Age_INV	-0.20	0.23	-1.34	0.45	-0.91	-2.98	Yes
Age_SQRT	0.59	0.23	-1.25	0.45	2.61	-2.78	No
Age_LN	0.47	0.23	-1.34	0.45	2.09	-2.99	No
Age_SQ	0.92	0.23	-0.62	0.45	4.07	-1.37	No
PI_INV	1.52	0.23	1.78	0.45	6.73	3.96	No
PI_LN	-0.62	0.23	-0.62	0.45	-2.74	-1.37	No
PI_SQRT	-0.25	0.23	-1.09	0.45	-1.11	-2.44	No
PI_SQ	0.60	0.23	-0.64	0.45	2.67	-1.43	No
HA_INV	0.94	0.23	1.04	0.45	4.16	2.33	No
HA_SQRT	-0.26	0.23	-0.24	0.45	-1.16	-0.54	Yes
HA_SQ	0.30	0.23	-0.46	0.45	1.33	-1.02	Yes
HA_LN	-0.47	0.23	0.04	0.45	-2.10	0.09	No

Skewness and kurtosis statistics transformed variables

Appendix G: Results regression analysis transformed variables

<i>Variable</i>	<i>B</i>	<i>Standard Error</i>	<i>Standardized coefficients Beta</i>	<i>t-value</i>	<i>Sig.</i>	<i>Tolerance</i>	<i>VIF</i>
(Constant)	2.40	2.05		1.17	0.24		
Packaging ^a	0.14	0.31	0.04	0.46	0.64	0.98	1.02
Price ^b	-0.31	0.31	-0.09	-1.01	0.31	0.99	1.01
Fresh package ^c	0.60	0.35	0.18	1.69	0.09	0.75	1.34
HA_ SQRT	0.39	1.01	0.04	0.39	0.70	0.93	1.07
Age_INV_CEN	-13.88	38.41	-0.09	-0.36	0.72	0.14	7.13
Age_INV_CEN2	2437.71	1941.83	0.14	1.25	0.21	0.73	1.37
Age_INV_CEN3	78203.74	164105.90	-0.11	0.47	0.63	0.16	6.04

Coefficients polynomials transformed variables

^a = Reference category is non-transparent packaging

^b = Reference category is low price

^c = Reference category is regular meal-kit

		<i>Purchase intention</i>	<i>Packaging</i>	<i>Price</i>	<i>Fresh package</i>	<i>HA_ S QRT</i>	<i>Age_ INV_ CEN</i>	<i>Age_ INV_ CEN 2</i>	<i>Age_ INV_ CEN 3</i>
Pearson Correlation	Purchase Intention	1.00	0.04	-0.09	0.20	0.03	-0.12	0.18	-0.04
	Packaging ^a	0.04	1.00	0.02	-0.02	-0.04	-0.08	0.04	-0.09
	Price ^b	-0.09	0.02	1.00	0.02	-0.06	-0.02	-0.03	0.00
	Fresh package ^c	0.20	-0.02	0.02	1.00	0.01	-0.44	0.10	-0.28
	HA_ SQRT	0.03	-0.04	-0.06	0.01	1.00	-0.18	-0.03	-0.23
	Age_INV_CEN	-0.12	-0.08	-0.02	-0.44	-0.18	1.00	-0.25	0.88
	Age_INV_CEN2	0.18	0.04	-0.03	0.10	-0.03	-0.25	1.00	-0.01
	Age_INV_CEN3	-0.04	-0.09	0.00	-0.28	-0.23	0.88	-0.01	1.00

Correlations including Age polynomials

^a = Reference category is non-transparent packaging

^b = Reference category is low price

^c = Reference category is regular meal-kit

<i>Variable</i>	<i>B</i>	<i>Standard Error</i>	<i>Standardized coefficients Beta</i>	<i>t-value</i>	<i>Sig.</i>	<i>Tolerance</i>	<i>VIF</i>
(Constant)	3.68	0.72		5.13	0.00		
Packaging ^a	0.07	0.31	0.02	0.24	0.81	0.97	1.03
Price ^b	-0.26	0.31	-0.08	-0.85	0.34	0.98	1.02
Fresh package ^c	0.62	0.34	0.18	1.80	0.08	0.79	1.25
Age_INV	-5.57	16.59	-0.04	-0.34	0.74	0.76	1.32
HA_SQRT_CEN	2.73	1.91	0.26	1.43	0.16	0.26	3.80
HA_SQRT_CEN2	-4.43	5.73	-0.08	-0.75	0.45	0.69	1.44
HA_SQRT_CEN3	-40.67	26.11	-0.31	-1.56	0.12	0.22	4.58

Coefficients polynomials transformed variables

^a = Reference category is non-transparent packaging

^b = Reference category is low price

^c = Reference category is regular meal-kit

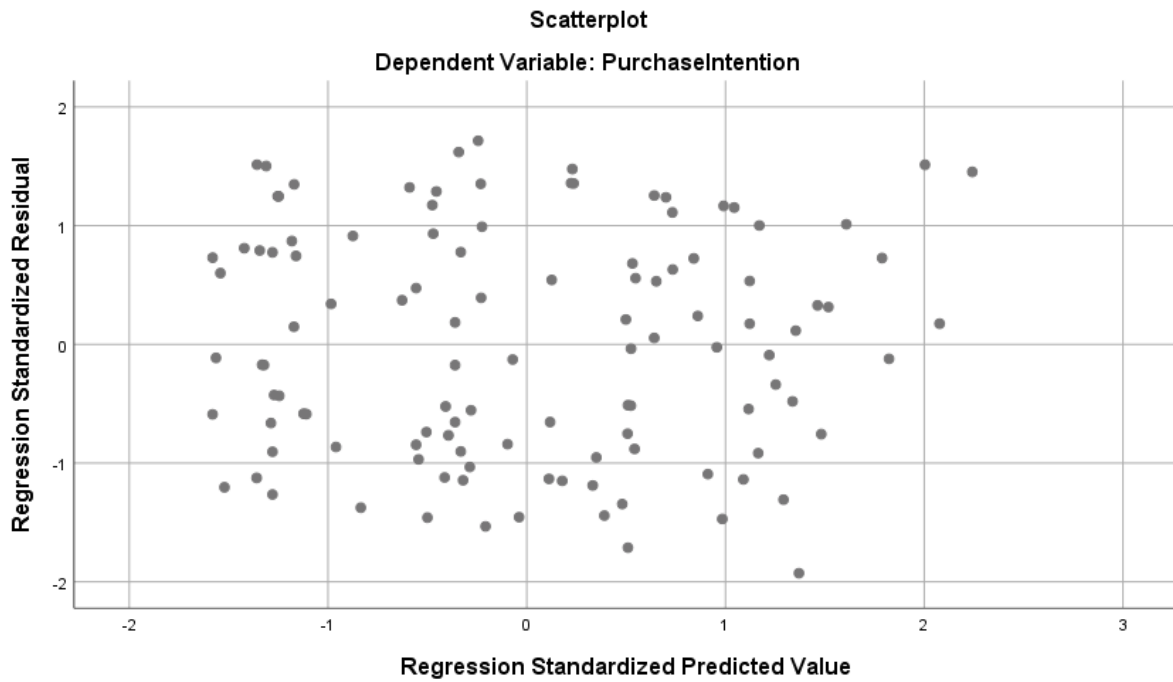
		<i>Purchase intention</i>	<i>Packaging</i>	<i>Price</i>	<i>Fresh package</i>	<i>Age_INV</i>	<i>HA_SQR T_C EN</i>	<i>HA_SQR T_C EN2</i>	<i>HA_SQR T_C EN3</i>
Pearson Correlation	Purchase Intention	1.00	0.04	-0.09	0.20	-0.12	0.03	-0.01	-0.05
	Packaging ^a	0.04	1.00	0.02	-0.02	-0.08	-0.04	0.01	-0.09
	Price ^b	-0.09	0.02	1.00	0.02	-0.02	-0.06	0.02	0.00
	Fresh package ^c	0.20	-0.02	0.02	1.00	-0.44	0.01	-0.02	0.02
	Age_INV	-0.12	-0.08	-0.02	-0.44	1.00	-0.18	0.13	-0.19
	HA_SQRT_CEN	0.03	-0.04	-0.06	0.01	-0.18	1.00	-0.19	0.83
	HA_SQRT_CEN2	-0.01	0.01	0.02	-0.02	0.13	-0.19	1.00	-0.45
	HA_SQRT_CEN3	-0.05	-0.09	0.00	0.02	-0.19	0.83	-0.45	1.00

Correlations including Health Awareness polynomials

^a = Reference category is non-transparent packaging

^b = Reference category is low price

^c = Reference category is regular meal-kit



Scatterplot transformed variables

<i>Model</i>		<i>Sum of Squares</i>	<i>df</i>	<i>Mean Square</i>	<i>F</i>	<i>Sig.</i>
1 ^a	Regression	16.64	5	3.33	1.23	0.300
	Residual	292.12	108	2.70		
	Total	308.76	113			
2 ^b	Regression	17.27	7	2.47	0.89	0.512
	Residual	291.48	106	2.75		
	Total	308.76	113			

ANOVA

^a = Regular model without interaction effects

^b = Includes the following interactions: Packaging*Fresh package, Price*Fresh package

<i>Model</i>	<i>R</i>	<i>R Square</i>	<i>Adjusted R Square</i>	<i>Std. Error of the Estimate</i>
1	0.232	0.054	0.010	1.64
2	0.247	0.056	-0.006	1.66

Model summary

<i>Model</i>	<i>Variable</i>	<i>B</i>	<i>Standard Error</i>	<i>t-value</i>	<i>Sig.</i>
1	(Constant)	3.17	2.23	1.42	0.16
	Fresh package ^a	0.64	0.34	1.85	0.07
	Packaging ^b	0.14	0.31	0.45	0.65
	Price ^c	-0.32	0.31	-1.04	0.30
	Age_INV	-4.17	16.52	-0.25	0.80
	HA_SQRT	0.19	1.01	0.19	0.84
2	(Constant)	3.15	2.29	1.37	0.17
	Fresh package	0.51	0.45	1.14	0.26
	Packaging	0.05	0.54	0.09	0.93
	Price	-0.27	0.44	-0.61	0.54
	Age_INV	-2.12	17.45	-0.12	0.90
	HA_SQRT	0.19	1.02	0.19	0.85
	Package*Fresh package	0.29	0.64	0.46	0.64
	Price*Fresh package	-0.09	0.64	-0.15	0.88

Coefficients transformed variables

^a = Reference category is regular meal-kit

^b = Reference category is non-transparent packaging

^c = Reference category is low price