

The Effectiveness of Influencer Marketing on Intentions to Adopt a Plant-Based Diet

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Abstract

The current thesis examined the relationship between the use of influencer marketing as an intervention on the intention to adopt a plant-based diet. Non-vegan participants (N = 123) were asked to complete an online survey including questions derived from the Theory of Planned Behavior and were exposed to two Instagram posts from food influencers showing plant-based meals. The results revealed that the two variables for perceived behavioral control (personal control and capability) were most influential on the intention to adopt a plant-based diet. Thus, future campaigns to influence a large audience to adopt a plant-based diet to advocate plant-based diets need to include an increased sense of perceived behavioral control.

Keywords: influencer marketing, plant-based diet, Theory of Planned Behavior

Introduction

In recent years, an abundance of research has revealed that the current consumption patterns of meat and dairy have catastrophic consequences on the environment (e.g. Sabaté & Soret, 2014). In particular, the amount of methane emissions produced by livestock, including dairy cows, is seen as one of the main causes of global warming (Moumen et al., 2016; Ugbogu et al., 2019). To reduce these methane emissions, the adoption of a diet without meat and other animal products, i.e. a plant-based diet, is seen as a possible strategy (Joyce et al., 2012; Sabaté & Soret, 2014). However, convincing people to change their diet is a difficult procedure, as this is perceived to be a drastic change with many barriers, such as the availability of plant-based substitutes for meat (Pohjolainen et al., 2015).

Thus, the current issue is to convince people to adopt a plant-based diet, as one of the strategies to reduce methane emissions (Lynch et al., 2018). As it is a given that these people do not currently follow a plant-based diet, they can be categorized into three different groups: meat eaters, meat avoiders, and vegetarians (Povey et al., 2001). The current thesis identifies meat-eaters as those who eat meat, meat avoiders as those who refrain from eating meat, but eat it on an occasional basis (i.e. flexitarians), and vegetarians as those who refrain from eating meat at all times (Rosenfeld et al., 2020).

One particular approach that has proven to be successful in the past, regarding the marketing of food to a large audience, is influencer marketing (Ki & Kim, 2019). The occurrence of companies hiring influencers, i.e. people with a large social media follower base, to promote their products or services is becoming more common (Haenlein et al., 2020). Therefore, as these online personalities have a proven influence on their audience, it is a feasible strategy to consider for both plant-based food companies and governmental campaigns. Most of all, this strategy can be used as a means to sell more products and make people more aware of the availability of plant-based foods, thus removing one of the

aforementioned barriers. In addition, governments may implement influencer marketing to promote the adoption of a plant-based diet. This is beneficial in terms of the stimulation of healthier eating patterns and the reduction of methane emissions (Joyce et al., 2012).

The intention to adopt a new behavior, in particular the adoption of a new and healthier diet, is a well-researched concept in academic literature (e.g. Wyker & Davison, 2010). Several models exist to measure this occurrence, nonetheless, one model is prevalent in research on behavioral change: the Theory of Planned Behavior (Nardi et al., 2019). This theory, and its corresponding model, follow a clear pathway: with the sum of one's attitude, perceived behavioral control, and subjective norm, i.e. opinions of important others, the intention to adopt a certain behavior can be measured (Ajzen, 1991). Certain longitudinal studies aim to measure the actual behavior as well, but due to time constraints, the current thesis aims to focus on the intention to adopt a plant-based diet, rather than the actual adoption of this diet.

Previous research has investigated people's intentions to adopt a plant-based diet, and what kind of consequences, either positive or negative ones, are associated with this behavioral change (e.g. Hirschler, 2011; Janssen et al., 2015; Wyker & Davison, 2010). Strikingly, previous research has not yet examined these issues in the context of influencer marketing. Therefore, the current thesis will build on existing research by examining the effects of plant-based food marketing by influencers on the intention to adopt a plant-based diet. First and foremost, this research provides a new understanding of how the affordances of influencer marketing can be a possible aid in convincing a large audience to pursue a diet that is more environmental-friendly (Lynch et al., 2018; Rosi et al., 2017). Second, governmental institutions may use the influencer marketing strategy to promote the benefits of a plant-based diet to a large audience, in an attempt to reduce their country's methane emissions. The current thesis, therefore, focuses on the following question: To what extent does influencer

marketing of plant-based products affect the intentions of non-vegans to adopt a plant-based diet?

The structure of the current thesis is as follows. First, the topics of influencer marketing, the plant-based diet, and the intention to adopt that diet are elaborated upon in more detail in the theoretical framework. Second, the methodology explains, among others, the stimuli materials and the procedure for the online survey. Third, the findings of this online survey are discussed in the results chapter. Fourth, the discussion and conclusion chapter presents the results of the hypotheses and the research question, as well as the strengths and weaknesses of the current research.

Theoretical Framework

The Plant-Based Diet

The adoption of a diet based on plant-based foods is becoming more popular as the availability of meat substitutes and the awareness of the effects that current agricultural practices have on the environment both see an increase (Greenebaum, 2012; Lea et al., 2006; Lynch et al., 2018; Rosi et al., 2017). A plant-based diet is characterized as a diet that contains no nutritional products derived from animals (Dinu et al., 2017). This means that, compared to the vegetarian diet, there are no eggs and dairy in a plant-based diet. Rather, a nutritional plant-based diet is focused on fruits, vegetables, whole grains, nuts, and so forth (Radnitz et al., 2015).

In academic and non-academic discourse, the distinction is made between a plant-based lifestyle and a plant-based diet (Greenebaum, 2015; Definition of veganism, n.d.). A plant-based lifestyle builds upon the diet by also excluding using any product derived from animals, including wool, silk, and leather. Whereas a plant-based diet has a focus on

nutritional products, and an individual who follows a plant-based diet may, for example, still wears leather shoes (Greenebaum, 2015).

Besides the fact that adopting a plant-based diet has a multitude of beneficial outcomes on one's health and the environment in the long term – these are discussed in a later section – skepticism remains on the nutritional deficiencies that are the result of not eating any meat and dairy (Craig, 2009; Hirschler, 2011; Joyce et al., 2012; Pohjolainen et al., 2014). In particular, there are worries about obtaining a sufficient amount of B12 and omega-3, which are commonly found in meat and fish. Nevertheless, these deficiencies can be supplemented with plant-based vitamins that are widely available today (Craig, 2009).

Motivations for adopting a plant-based diet. There is a multitude of reasons that can urge people to make a dietary change. This section deals with the three most prevalent ones: health benefits, environmental benefits, and ethical concerns about animal welfare. First, people make the switch to a plant-based diet due to health benefits. Longitudinal medical studies reveal that a plant-based diet that consists of plenty of fruits, vegetables, nuts, and other whole foods, has positive effects on one's health in the short term (Radnitz et al., 2015). Such as a decreased intake of saturated fat, lower cholesterol, and an increased intake of dietary fiber (Craig, 2009). In the long term, there are other beneficial health outcomes, including a reduced risk of heart disease and other chronic illnesses and lower blood pressure (Craig, 2009; Dinu et al., 2017; Lynch et al., 2018). Nevertheless, it is important to note that one can only reap the benefits of these health outcomes if one follows a plant-based diet that contains plenty of fruits, vegetables, and nuts. This is worth noting as there are a lot of products available that are also plant-based, but not healthy, such as chips, cookies, and so forth (Radnitz et al., 2015). Therefore, people who are aware of the health benefits are more

likely to have stronger intentions to adopt a plant-based diet, compared to people who are not aware of these benefits. Thus, the first hypothesis is as follows:

H1 The intention to adopt a plant-based diet is stronger for people who are aware of the health benefits.

Second, the beneficial impact that a plant-based diet has on the environment is another noteworthy motivation, as the sustainability of current agricultural practices is being questioned by both academics and the public (Janssen et al., 2016; Joyce et al., 2012). Keeping livestock for meat results in the use and pollution of freshwater and deforestation on a large scale, for instance in the Amazon (Joyce et al., 2012). The use of freshwater to produce meat also concerns an ethical issue, as it is predicted that over half of the world population will live in areas without access to a sufficient amount of water by 2025 (Baghbanzadeh et al., 2017; Khalid et al., 2017). A nutritional plant-based diet relies on whole foods such as grains, fruits, and vegetables, resulting in a lower number of necessary resources, compared to keeping livestock for meat and dairy (Lynch et al., 2018). Therefore, as there are less land and freshwater necessary to grow fruits, vegetables, and so forth, direct results include reduced use of freshwater, a lower ecological footprint, and lower levels of methane emissions (Lynch et al., 2018; Rosi et al., 2017). Therefore, people who are aware of the environmental benefits are more likely to have stronger intentions to adopt a plant-based diet, compared to people who are not aware of these benefits. Thus, the second hypothesis is as follows:

H2 The intention to adopt a plant-based diet is stronger for people who are aware of the environmental benefits.

Third, a plant-based diet is also adopted due to ethical concerns. In particular, people are worried about the welfare of animals in factory farming. Factory farming is a term used for intensive farming on a large scale, which only focus is to make the most profit (Smith, 2019). The animals that are a part of the factory farming process, are almost always inside, stuffed in cramped spaces that are not cleaned on a regular basis. Besides, antibiotics and other additives are often used to make the animals grow bigger in a short amount of time, thus getting more meat from one animal (Mills, 2019; Smith, 2019). The fact that factory farming, and thus the inhumane treatment of animals, accounts for a larger part of meat and dairy production compared to smaller, organic-focused farms, can cause people to make the switch to a plant-based diet (Chiu & Lin, 2009; Goldstein et al., 2016; Hirschler, 2011; Smith, 2019). Therefore, people who are aware of the ethical concerns are more likely to have stronger intentions to adopt a plant-based diet, compared to people who are not aware of these concerns. Thus, the third hypothesis is as follows:

H3 The intention to adopt a plant-based diet is stronger for people who are aware of ethical concerns.

Perspectives on plant-based diets. Although there is a multitude of benefits that occur as a result of adopting a plant-based diet, individuals still face many barriers when it comes to changing to this particular diet. First, most people who want to follow a plant-based diet grew up in households in which eating meat was the norm (Hirschler, 2011). This is common in many Western societies, in which the high consumption of meat goes hand in hand with an unwillingness to adopt a plant-based diet, despite an awareness of the beneficial aspects of following this diet (Graça et al., 2015; Pohjolainen et al., 2014). Also, individuals

tend to have an increased sense of meat attachment, i.e. positive opinions on the consumption of meat, in Western societies. This aspect makes it more difficult for these individuals to consider a plant-based diet, due to their positive associations with meat (Graça et al., 2015).

Another significant barrier that individuals face is the lack of information on plant-based diets (Hirschler, 2011; Lea et al., 2006). This barrier consists of several aspects, including concerns about avoiding nutritional deficiencies and the preparation of meals without any meat and dairy (Hirschler, 2011). Also, the latter barrier is based on unawareness of the meat substitutes and other plant-based foods that are available in restaurants and supermarkets, although these are more prevalent in some countries than others (Hirschler, 2011; Lea et al., 2006).

To make the transition to a plant-based diet easier, a lot of people tend to adopt a vegetarian diet (Hirschler, 2011). This diet contains several beneficial aspects that are similar to the plant-based diet, e.g., reduced risk of heart disease (Dinu et al., 2017; Joyce et al., 2012; Rosi et al., 2017). Yet, adopting a vegetarian diet is seen as a less obtrusive dietary change compared to a plant-based diet (Hirschler, 2011). Although vegetarians and meat-eaters tend to view their diets in the most positive light, vegetarians have a more positive perspective on plant-based diets as there is a smaller difference in eating habits compared to meat-eaters (Povey et al., 2001). Based on the small difference in eating habits and a low degree of meat attachment for people who follow a plant-based diet and people who follow a vegetarian diet, it is more likely for the latter to have intentions to adopt a plant-based diet, compared to people who follow a meat-eating diet (Rosenfeld et al., 2020). Nonetheless, as flexitarians are actively pursuing a diet that contains less meat, this group is also seen as one with a low degree of meat attachment. Therefore, the fourth hypothesis is as follows:

H4 The intention to adopt a plant-based diet is stronger for people with a low degree of meat attachment, i.e. flexitarians and vegetarians.

Influencer marketing

The increased popularity of social media in recent years has caused a new marketing strategy to appear: influencer marketing. In essence, an influencer is an online personality who has a large number of followers on social media channels such as Instagram and YouTube (Lou & Yuan, 2019). Nevertheless, academic research has specified this definition, to account for an engaged audience, i.e. by “liking” and commenting on posts or videos, and the fact that influencers create their own, original content (Haenlein et al., 2020; Lou & Yuan, 2019; Stubb et al., 2019). The current thesis also utilizes this definition of an influencer, as this is a viable component for the method of this research.

It is important to note that influencers should be differentiated from traditional celebrities. The latter have become famous via traditional media, such as being an actor in a movie or a singer in a band. Whereas influencers have become famous via posting content on social media channels (Jin et al., 2018; Lou & Yuan, 2019). Past research reveals that on many features, including likeability, trustworthiness, and attractiveness, influencers are perceived more positively than traditional celebrities (Djafarova & Rushworth, 2017; Jin et al., 2018; Lou & Yuan, 2019).

To continue, the way that influencer marketing works is as follows. Companies hire influencers to promote a certain product or service. Between the company and the influencer, there is a contract that states how many posts or videos should be created, the timeline of the collaboration, and certain words that the influencer must include (Goanta & Ranchordás, 2020).

Nevertheless, influencers must be careful when they receive an offer from a brand to create content for a specific product. First and foremost, since being an influencer can be a full-time job, their livelihood depends on the income they generate from creating branded content (Suciu, 2020). Second, selecting a brand with a bad reputation in terms of sustainability or false claims, can harm the reputation of the influencer and thus lose a lot of followers (Jin et al., 2018). Moreover, influencers have often established themselves to be an expert in a specific area. For instance, some influencers focus on beauty, travel, fitness, and so forth. Therefore, branded content has proven to yield more successful results if an influencer promotes a product that is a part of that specific area (Lou & Yuan, 2019). To illustrate, a beauty influencer who promotes a certain make-up product is more likely to be trusted by their followers than a travel influencer who promotes the same product (Lou & Yuan, 2019). Based on these claims, the marketing of plant-based products by a food influencer would result in a more influenced audience, compared to an influencer who does not identify themselves as a food influencer. Therefore, the fifth hypothesis is as follows:

H5 Influencer marketing of plant-based products – from a food influencer – correlates positively with the intention to adopt a plant-based diet.

Susceptibility to influencer marketing. Actions taking after the exposure to influencer marketing can go one of two ways. On the one hand, after being exposed to the marketing message, the social media user decides not to purchase the promoted product or service. On the other hand, the social media user is exposed to the marketing message and decides to purchase the promoted product or service. The degree of social media usage appears to be a significant predictor that drives the decision either to purchase or not purchase the marketed product (Kwahk & Kim, 2017; Laksamana, 2018). An individual who checks

multiple social media platforms on a daily basis is more susceptible to marketing messages, compared to an individual who checks multiple social media platforms once a week (Tussyadiah et al., 2018). Therefore, conclusions may be drawn that individuals who spend more time on social media platforms are more susceptible to, and are thus more likely to adopt a plant-based diet in the future when exposed to influencer marketing including a message on plant-based foods.

Influencer food marketing and consumption. Past research reveals that exposure to food marketing messages influences the actual food intake, which is beyond the scope of the current research but still a notable finding (Folkvord et al., 2016; Folkvord & Hermans, 2020). In particular, online marketing techniques including influencer marketing to increase fruit and vegetable consumption demonstrated a positive effect on the actual consumption (Folkvord & Hermans, 2020). Therefore, the healthy food promotion model may be applied to investigate this relationship in further studies. In brief, the healthy food promotion model assumes that through the promotion of healthy foods, i.e. fruits and vegetables, the awareness and liking of these foods will increase and as such, fruits and vegetables are consumed on a more regular basis compared to before the healthy food promotion (Folkvord & Hermans, 2020). To further build upon that finding, the healthy food promotion model is an appropriate model to consider when aiming to increase the adoption of plant-based diets, since that diet relies on an increased intake of fruits and vegetables to be considered healthy (Radnitz et al., 2015).

The Theory of Planned Behavior

To establish a relationship between plant-based food marketing by influencers and people's intention to adopt a plant-based diet, the Theory of Planned Behavior is utilized to

measure whether there is a relationship between the two concepts. The Theory of Planned Behavior assumes that the intention to perform a certain behavior is a significant predictor of the actual performing of the behavior (Ajzen, 1991). This theory is a broadened version of the Theory of Reasoned Action since that theory had its limitations concerning the volitional control, i.e. the conscious choice to perform a behavior, which is the reason why “perceived behavioral control” is an addition to the Theory of Planned Behavior (Ajzen, 1991).

There are multiple elements included in the Theory of Planned Behavior: attitude, subjective norm, and perceived behavioral control (Ajzen, 1991). First, attitude refers to whether the behavior is seen as favorable or unfavorable. Second, subjective norm refers to whether important others, i.e. friends and family in one’s close circle, think one should perform the behavior. Third, perceived behavioral control refers to the perceptions of one’s ability to perform the behavior. The latter consists of two important aspects: the actual opportunities one has to perform the behavior, and the belief that one can perform the behavior. It is important to note that in the case of an abundance of opportunities combined with little belief in one’s ability, then the perceived behavioral control will be a low score (Ajzen, 1991). All in all, these three elements have an established effect on the intention, which in turn affects the final element: performing the behavior (Ajzen, 1991; Wyker & Davison, 2010).

While the current thesis only utilizes the aforementioned elements, past research also took into account the factors that influence the attitude, subjective norm, and perceived behavioral control (e.g. Fehér et al., 2020). According to the Theory of Planned Behavior, beliefs are the guide of human behavior (Ajzen, 1991). One’s positive or negative attitude regarding a plant-based diet depends upon one’s behavioral beliefs. For instance, if one believes the cost of adopting a plant-based diet outweighs the benefits, one’s attitude is that a plant-based diet is perceived to be a negative behavior. In the case of subjective norms, this is

guided by normative beliefs. These beliefs consist of what one perceives to be the likelihood that certain people, including their friends and family, would approve of them adopting a plant-based diet. The perceived behavioral control depends upon control beliefs, which take into account the perceived availability of resources and opportunities. If one believes they have ample opportunities and resources to adopt a plant-based diet in the future, their perceived behavioral control should reflect this (Ajzen, 1991).

The Theory of Planned Behavior is a well-researched and valid measure in academic research (Wyker & Davison, 2010). Also, this measure is often applied to research on dietary changes, which makes the Theory of Planned Behavior an appropriate measure for the current study (e.g. de Gavelle et al., 2019; Gregorio-Pascual & Mahler, 2020; Nardi et al., 2019; Wyker & Davison, 2010). Nonetheless, current studies that focus on dietary change with the Theory of Planned Behavior reveal inconsistent findings, which is why the current thesis will build upon those theories by providing new findings by combining influencer marketing with plant-based diets in the context of the Theory of Planned Behavior (e.g. Wyker & Davison, 2010).

Moreover, as the current thesis concerns the intention to adopt a plant-based diet, the three aforementioned elements are specified as follows. The attitude refers to the positive or negative associations one has with a plant-based diet. The subjective norm refers to one's perception of social expectations from important others to adopt a plant-based diet. The perceived behavioral control refers to the perceptions of one's ability to adopt a plant-based diet. Nonetheless, considering the limited timeframe and resources, the current thesis cannot establish the actual behavior of the participants, thus only their intention to adopt a plant-based diet will be measured using the Theory of Planned Behavior.

Transtheoretical Model

The current thesis aims to examine the intention to adopt a plant-based diet, therefore, a model that can determine one's readiness to change their behavior is a valuable addition to this theoretical framework. In particular, the Transtheoretical Model can measure in which stage of change, i.e. one's willingness to adopt a new behavior, an individual belongs (Prochaska et al., 2015). The Transtheoretical Model views change as a process that occurs in a gradual manner, rather than an abrupt change that occurs from one moment to another (Prochaska et al., 2015).

In the context of the change to a plant-based diet, research reveals that utilizing the Transtheoretical Model is a valid measure and an effective intervention when aiming for increased consumption of plant-based products (Lea et al., 2006).

The Transtheoretical Model proposes that there are six stages of change that individuals belong to when considering changing their behavior (Prochaska et al., 2015). It is important to note that the time frames for the several stages are merely suggestive, as some individuals need more time than others to adjust to the new behavior (Povey et al., 1999). First, in the precontemplation stage, an individual has no intention to change their behavior within the next six months. This has several causes, including a lack of information on the new behavior, and previous attempts that failed. Second, an individual in the contemplation stage does have the intention to change their behavior in the next six months. These individuals, compared to those in the precontemplation stage, have obtained the necessary information on the behavior, but are also aware of the negative consequences. Therefore, these individuals may be going back and forth on the perceived advantages and disadvantages of adopting the new behavior. Third, the preparation stage consists of the intention to change to the new behavior within a short time frame, usually one month. Here, the individual is no longer contemplating the consequences but has a clear perspective on what needs to be done

to acquire this new behavior. Fourth, individuals that belong to the action stage have adjusted parts of their daily lives to accommodate the new behavior. The fifth stage is the maintenance stage, where the individual has made changes in their day-to-day life to perform the desired behavior over the past six months. The sixth and final stage is termination. Individuals in this stage have no intention to return to the previous behavior and perform the new behavior indefinitely. The main difference between this stage and the previous stage, maintenance, is that lifestyle changes are applied on a less frequent basis, as the individual has an increased degree of self-efficacy to perform the new behavior (Lea et al., 2006; Povey et al., 1999; Prochaska et al., 2015).

Methods

Participants

The target group for the current study did not contain any age or nationality constraints, the latter was possible due to English being the survey language. The main requirement, however, was that the participants should not be following a plant-based diet at the time of the survey, as the current study aims to measure the intention to adopt a plant-based diet. It was noted that following a plant-based lifestyle, such as refraining from wearing leather products, was accepted to participate in the survey.

Participants were recruited via various social media channels, such as Facebook and LinkedIn. The social media message contained the following items. First, it was made clear that the participants should not follow a plant-based diet at the moment of the survey. Second, a brief background of the research was provided, namely that the survey was carried out as a part of the researcher's Master's thesis at Tilburg University. Third, it was included that questions would be asked about their intentions to adopt a plant-based diet.

Materials

The materials provided in the online survey contained six overarching elements. First, the three demographic questions included age, gender, and education level. Second, three factual questions aimed to gather more information on the participant's current lifestyle and included a question on whether the participant is responsible for the grocery shopping of the household, as this factor might affect their willingness to purchase plant-based products (Gajjar, 2013). Moreover, two additional factual questions aimed to establish which diet the participant was following at the time of the survey and which stage of change, derived from the Transtheoretical Model, the participant belonged to (Lea et al., 2006). Only the first three stages were included in the answer options, namely precontemplation, contemplation, and preparation. As the other three stages were affiliated with the actual adoption of the new behavior, these were thus not suitable for the current study, since the requirement stated that participants should not follow a plant-based diet at the time of the survey.

Third, information was gathered on the social media usage of the participants, as research has shown that active engagement on social media positively correlates with one's susceptibility to marketing messages (Tussyadiah et al., 2018). Therefore, three questions were asked regarding whether the participants had a social media account, whether they followed influencers on any social media platform, and how often they checked those platforms, which four answer options ranged from multiple times a day to once a week.

Fourth, it was hypothesized that participants who were more aware of the benefits of a plant-based diet, would be more likely to adopt this diet. As such, four questions were asked regarding these benefits. The first question, in the form of a matrix, asked participants to indicate to what extent they were aware of the health, environmental, and ethical benefits that come with a plant-based diet. Answer options were on a 5-point Likert scale, ranging from "Not at all aware" to "Extremely aware". Then, three questions, one for each benefit, were

included. Each question contained the statement “The adoption of a plant-based diet has benefits”, followed by a specification on either health, environment, or ethics. One example of such benefit was included in the question, derived from previous literature on motivations to adopt a plant-based diet (Joyce et al., 2012; Lynch et al., 2018; Smith, 2019). Followed by the example, the participants were asked to rate how important each benefit was in their decision to adopt a plant-based diet. Answer options ranged from “Not at all important” to “Extremely important” on a 5-point Likert scale.

Fifth, the participants were exposed to the screenshots of two Instagram posts from influencers promoting plant-based foods. Following a similar research procedure conducted by Phua et al. (2020), two influencers, one male (Gaz Oakley, @avantgardevegan) and one female (Sadia Badiei, @pickuplimes), were chosen based on several characteristics. Both influencers have similar Instagram accounts that have a main focus on food, both Instagram posts feature the influencer and a meal they made, and both posts had received a number of likes within the range of 21.000 to 25.000. The survey included a screenshot of the actual image as well as a modified text (see Appendix A). The texts that accompanied the original Instagram posts were not informative and it was not made clear that the meals were vegan. Therefore, the modified texts reveal the ingredients of the meal, all of which are widely available in supermarkets, as research has shown that lack of knowledge on preparing a plant-based meal is one of the main barriers individuals face when contemplating a plant-based diet (e.g. Hirschler, 2011).

Sixth and final, questions derived from previous studies measured the four elements of the Theory of Planned Behavior: attitude, subjective norm, perceived behavioral control, and intention. All questions and answer options were derived from Povey et al. (2001) and Wyker and Davison (2010). In total, the four elements contained twelve variables: four for attitude,

four for subjective norm, two for perceived behavioral control, and two for intention. A complete list of the variables and their abbreviations can be found in Appendix B.

Attitude towards adopting a plant-based diet was measured in the form of a matrix table, with the four items ranging from “Bad” to “Good”, “Harmful” to “Beneficial”, “Unpleasant” to “Pleasant”, and “Unenjoyable” to “Enjoyable”. The answer options were seven scale points.

Subjective norm was measured with another matrix table, participants were asked to indicate to what extent their friends, family, health experts, and colleagues wanted them to adopt a plant-based diet in the next 12 months. The answer options ranged from “Not at all” to “To a very great extent” on a 7-point Likert scale.

Perceived behavioral control was measured with two questions: the extent of their personal control to adopt a plant-based diet in the next 12 months and the extent to which they felt capable to adopt a plant-based diet. The answers to both questions had 7-point Likert scales, ranging from “Very little” to “A lot” and “Not very capable” to “Very capable”, respectively.

Intention was also measured with two questions: their intention to adopt a plant-based diet in the next 12 months and the likelihood to adopt a plant-based diet in the next 12 months. Answer options for both questions ranged from “Strongly disagree” to “Strongly agree” and “Not at all likely” to “Extremely likely” respectively, on 7-point Likert scales. The 7-point Likert scales for the four variables for attitude and the two variables for perceived behavioral control corresponded with a score ranging from -3 to +3, which were applied to the dataset in SPSS (Wyker & Davison, 2010). For instance, “Strongly disagree” would result in a score of -3.

Design

The design of the current thesis followed a quantitative method in the form of an online survey, which was created in Qualtrics. The survey had a within-subjects design, meaning that all participants were exposed to the same materials. The variables included in the research were as follows. The independent variables were the three demographic variables (age, gender, and education level), the stage of change (precontemplation, contemplation, and preparation), and the influencer marketing in the form of two Instagram posts. The dependent variable was the intention to adopt a plant-based diet, which included the twelve questions that measured the Theory of Planned Behavior.

Procedure

The online survey was spread on several social media platforms and online forums. It was made clear that the requirement was for the participants to not follow a plant-based diet at the time of the survey. In the introduction to the survey, it was made clear that there were no risks or incentives involved. At the end of the introduction, the participants had to confirm that they agreed to participate in the survey and that they consented to the use of their data for research purposes. Participants were sent to the end of the survey if they did not check both boxes, or left one checkbox open.

Participants who did check both boxes were asked the demographic questions, followed by the factual questions. Then, they were asked to answer questions on their social media usage of social media platforms, followed by the exposure to the two Instagram posts. The final questions of the survey included the questions derived from the Theory of Planned Behavior. After completion of the survey, they were thanked for their participation.

Data analysis

The quantitative data of the current research was analyzed using the 26th version of SPSS. First, descriptive statistics were applied to the demographic variables (gender, age, education level) to gain an insight into the participants who completed the survey. Additional descriptive analyses on the variables on the factual questions (current diet, stage of change, awareness of benefits of a plant-based diet) provided additional information that enriched the data set.

Second, correlational analyses were completed for the variables for awareness and importance, in combination with the intention to adopt a plant-based diet, to examine whether an increased degree of awareness of the aforementioned benefits correlates positively with the intention to adopt a plant-based diet. Third, bivariate correlational analyses were conducted on the variables for current diet, current stage of change, and intention to adopt a plant-based diet, to examine if these variables had a positive relationship with the intention to adopt a plant-based diet.

Third, the internal consistency of the four elements of the Theory of Planned Behavior (attention, subjective norm, perceived behavioral control, intention) was measured using Cronbach's alpha for all twelve variables. Then, conform to previous analyses of the Theory of Planned Behavior, two analyses were conducted (Jalilian et al., 2016; Kaye et al., 2020). Fourth, bivariate analyses were run on the ten variables for attitude, subjective norm, and perceived behavioral control in combination with intention to measure to what extent the ten variables influenced the intention to adopt a plant-based diet. Fifth, the ten variables for attitude, subjective norm, and perceived behavioral control were applied to a multiple regression model using backward elimination, to determine which set of variables were most influential for the intention to adopt a plant-based diet.

Results

Description of the data

In total, the sample included 123 participants. The mean age was 27.07 ($SD = 8.71$), with a range from 18 to 58. 69 of the participants were women, 49 were men. Two participants reported not to identify with any specific gender and three participants indicated they rather not disclose their gender. Education levels ranged from primary school to a Master's degree, the majority (43.1%) having completed a Bachelor's degree. Four participants reported being "Other" in terms of education level, for instance, a vocational degree.

Before conducting the statistical analyses, several steps had to be taken to ensure a valid dataset ($N = 123$). First, visual exploration of the data using boxplots identified no outliers in our dataset. Second, there were also no straightliners, i.e. participants who selected the same option for all twelve items belonging to the Theory of Planned Behavior.

The factual questions included six items. First, 70.7% reported being responsible for grocery shopping in their household. Second, the two questions related to the dietary and stage of change questions resulted in the following statistics. The majority (43.1%) reported following a flexitarian diet, followed by 39.0% for the carnivore diet, 9.8% for the vegetarian diet, and 3.3% for the pescatarian diet. 4.9% reported following another diet, including a low-carbohydrate diet. The results for the three stages of change were as follows: precontemplation (73.2%), contemplation (4.9%), preparation (22.0%). Third, social media usage was measured with three items. 21 participants (17.1%) did not have a social media account and were not exposed to the other two items. Of the remaining 102 participants, 54 followed influencers on social media. 53.7% of the participants ($N = 102$) reported checking

their social media channels multiple times a day, followed by once a day (19.5%), multiple times a week (6.5%), and once a week (3.3%).

Testing hypotheses

First, correlations were run on the six variables for awareness and importance of health, environment, and ethics on the intention to adopt a plant-based diet. This resulted in a positive relationship for all variables on intention ($r_s = .218$, see Appendix C). However, four variables were statistically significant at the .01 level, two variables were statistically significant at the .05 level: AW Environment and AW Ethics. To reduce the chances of Type I errors (false positives), only the four variables with p-values at the .01 level were considered for answering the hypotheses and concluding remarks (Trafimowa & Earp, 2017). Both variables, importance and awareness, for health benefits were statistically significant. Thus, these results support the first hypothesis that increased awareness of health benefits has a positive relationship with an increased intention to adopt a plant-based diet. The second hypothesis stated that increased awareness of environmental benefits positively correlates with the intention to adopt a plant-based diet. Since the awareness variable for environmental benefits was not statistically significant at the .01 level, the second hypothesis was not supported by the results. The third hypothesis stated that increased awareness of ethical benefits had a positive relationship with the intention to adopt a plant-based diet. Since the awareness variable for ethical benefits was not statistically significant at the .01 level, the second hypothesis was not supported by the results.

Second, bivariate correlations were conducted to measure the relationship between the current diet, current stage of change, and intention. The correlation between the current diet and intention was not statistically significant ($p > .01$). Thus, the fourth hypothesis – a low meat attachment in the form of a vegetarian or flexitarian diet, correlates positively with the

intention to adopt a plant-based diet – was not supported by the results. However, the current stage of change and intention revealed a positive relationship ($r_s = .650$, $p_s < .001$, see Appendix D).

Third, the internal consistency of the four variables of the Theory of Planned Behavior was measured using Cronbach's alpha. Three out of the four overarching variables, attitude ($\alpha = .85$), subjective norm ($\alpha = .86$), and intention ($\alpha = .93$) were acceptable in terms of internal consistency. The variables for perceived behavioral control resulted in an unacceptable alpha ($\alpha = .40$). Albeit an unacceptable value, considering the importance of the variables for perceived behavioral control, these were included in further analyses for the Theory of Planned Behavior.

Fourth, a bivariate correlation analysis was conducted to evaluate the strength of the relationship of attitude, subjective norm, and perceived behavioral control on intention using Pearson's r . The analysis included four variables for attitude, four variables for subjective norm, and two variables for perceived behavioral control, which were combined with two variables for intention. All variables - except "Personal control" for perceived behavioral control - revealed statistically significant relationships with intention ($p_s < .001$, see Appendix E): ATT Bad:Good ($r = .488$), ATT Harmful:Beneficial ($r = .467$), ATT Unpleasant:Pleasant ($r = .530$), ATT Unenjoyable:Enjoyable ($r = .543$), SN Friends ($r = .539$), SN Family ($r = .490$), SN Health experts ($r = .384$), SN Colleagues ($r = .428$), PBC Personal control ($r = .870$, $p = .339$), and PBC Capability ($r = .534$).

Fifth, multiple regression using backward elimination was conducted to identify the strongest predictors of intention. All ten variables for attitude, subjective norm, and perceived behavioral control were included. The elimination of a variable was determined by the probability value ($p > .1$). In model 6, 56.7% of the variance of intention was explained by five variables: ATT Harmful:Beneficial, ATT Unpleasant:Pleasant, SN Family, PBC Personal

Control, and PBC Capability (Appendix F, Table 4 and 5). These five variables are the strongest predictors for intention. This evidence is in support of the fifth hypothesis – influencer marketing positively correlates with the intention to adopt a plant-based diet.

Discussion and Conclusion

The current research aimed to identify whether the intervention of influencer marketing messages increases people's intentions to adopt a plant-based diet in the future. The data retrieved from an online survey support this hypothesis, since a majority of the variables from the Theory of Planned Behavior were strong predictors for intention to adopt a plant-based diet. Overall, the study demonstrates a strong correlation between the two variables for perceived behavioral control – personal control and capability – and the intention to adopt a plant-based diet.

The first hypothesis states that people who are more aware of the health-related benefits of adopting a plant-based diet are more intended to adopt this diet in the future. The results support this hypothesis. Other studies have reported similar findings and suggest that health-related benefits, including a decreased risk for long-term illnesses, are important motivations for one's dietary change (Janssen et al., 2016; Radnitz et al., 2015). Previous studies also reveal that the prevalence of health-related motivations for the short-term benefits, including a diet richer in fruits and vegetables, is present to the same extent as the long-term benefits (Dyett et al., 2013; Radnitz et al., 2015).

The second hypothesis states that people who are more aware of environmental-related benefits regarding a plant-based diet are more intended to adopt this diet. The data suggest that this correlation is nonexistent. For the most part, this finding is in line with past research, as studies reveal that benefits regarding the environment, including a decrease in both land and freshwater use to maintain livestock, are of little influence to change one's diet (Janssen

et al., 2016). Possible explanations are that compared to the influential health-related benefits, over which one has a high degree of personal control, environmental benefits seem out of one's reach to directly impact, as well as the fact that a lot of people must adopt a plant-based diet to realize the actual, positive change to the environment (Lynch et al., 2018). Besides, research suggests that due to its complexity, the environmental aspect may become more important after adopting the plant-based diet, rather than being the main motivator (Fox & Ward, 2008; Hirschler, 2011).

The third hypothesis states that people who are more aware of the ethical-related benefits of a plant-based diet are more intended to adopt this diet. The results revealed that this was not the case, which contradicts claims from previous research on the prevalence of animal welfare motivations to adopt a plant-based diet (Fox & Ward, 2008; Janssen et al., 2016). Possible explanations are similar to those of the second hypothesis; one may be more aware and informed about issues on animal welfare when one has made the decision to adopt a plant-based diet and is thus in a further developed stage of change than those who participated in the current study (Janssen et al., 2016; Lea et al., 2006).

The fourth hypothesis states that the current diet is an influential predictor for the intention to adopt a plant-based diet. In particular, it was hypothesized that people who follow a vegetarian diet are more inclined to adopt a plant-based diet in the future, due to a lower degree of meat attachment. This hypothesis was not supported by the results, which contradicts previous literature in the sense that vegetarians are often more open to a diet without any meat or dairy, rather than people who consume meat on a regular basis (Hirschler, 2011). Nevertheless, the data suggest that the stage of change, derived from the Transtheoretical Model, was an important predictor for intention to adopt a plant-based diet. This means that individuals who were further along in the stages of change were more inclined to adopt a plant-based diet. Thus, an individual in the preparation stage is more likely

to adopt a plant-based diet compared to an individual in the precontemplation stage. In particular, this finding further builds upon previous claims that the Transtheoretical Model is an appropriate intervention when aiming for increased adoption of a plant-based diet (Lea et al., 2006). This model is discussed in more detail in the sections below.

The fifth and final hypothesis states that influencer marketing, performed by a food-related influencer, increases the intention to adopt a plant-based diet. The data reveal that there is indeed a positive correlation between these two concepts, and they hence provide evidence to support this hypothesis. These results build upon previous theories that influencer marketing is an applicable intervention with regards to the marketing of food to a large audience (Ki & Kim, 2019). Most of all, as no research exists to date that contradicts these results, this finding provides new evidence on the applicability of influencer marketing in the context of a plant-based diet.

The current research suffered from a small set of limitations. First and foremost, it was beyond the scope of the study to measure the actual behavior, i.e. adopting a plant-based diet. Instead, the current study focused on intention to adopt a plant-based diet. A longitudinal research procedure would cause additional data regarding whether a high degree of intention to adopt a plant-based diet correlates positively with the actual behavior in the future.

Another limitation included the provided examples for the benefits of adopting a plant-based diet for health, environment, and ethics. To illustrate, the provided example for ethical benefits focused on factory farming, nevertheless, providing another example or more examples in general might have caused the participants to be better aware of the ethical benefits. Thus, results might have differed if more examples from previous theories were provided in the online survey.

The main practical implication for the current research is the following. The variables for perceived behavioral control were the strongest predictors of the intention to adopt a plant-

based diet. Thus, future interventions, either in the shape of the influencer marketing of plant-based diets, or government campaigns to boost healthy food choices, need to include an increased sense of personal control and capability (Wyker & Davison, 2010). The increase of the sense of personal control may be done by, for instance, focusing on making one's plant-based meals from scratch, or being aware of where to purchase the plant-based alternatives to one's favorite foods, including yogurt, eggs, and cheese. As for the latter, the increase of the sense of capability may be done by, for instance, stressing the availability of plant-based products at local supermarkets. As such, these elements will contribute to higher perceived behavioral control.

Moreover, as the elements of the Transtheoretical Model proved to be influential factors for the intention to adopt a plant-based diet, this may also be an appropriate tool in the process of stimulating the public to adopt a plant-based diet. If the relevant elements of the Transtheoretical Model (precontemplation, contemplation, and preparation) are presented to the public, the awareness of steps that should be taken in the future in order to adopt a plant-based diet increases (Lea et al., 2006). As such, if this strategy is combined with the increased perceived behavioral control, the public may be more inclined to adopt a plant-based diet in the future, as the barriers of not being informed about the specifics of a plant-based diet and how one should adopt a plant-based diet while remaining healthy are dissolved (Hirschler, 2011).

Future research may expand by building upon the two limitations of the current study. First, future studies should transform the methodology to a longitudinal study, in which the participants are asked to report possible dietary changes one year after the initial survey (Ajzen, 1991). Second, additional research should be performed to determine whether there is a correlation between one's awareness of the benefits of a plant-based diet and intentions to

adopt this diet. Other beneficial aspects not mentioned in the current study may be more influential on the intention to adopt a plant-based diet (e.g. Graça et al., 2015).

All in all, as no research to date had studied the intervention of influencer marketing on intentions to adopt a plant-based diet in the future, the results of the current study add to the available literature. In particular, the intervention of influencer marketing including elements of perceived behavioral control would be most successful when aiming to convince a large audience to adopt a plant-based diet. The aforementioned practical implication may be utilized by governments or other large institutions that aim to reduce their country's methane emissions, specifically by focusing on bringing awareness to the public about where to purchase plant-based alternatives to dairy and meat products and how to prepare plant-based meals that are healthy and taste good. These strategies, that aim to increase the production and consumption of plant-based foods over dairy and meat products, are essential to implement in government campaigns and the like as reducing methane emissions largely depends on less land that is occupied by livestock (Joyce et al., 2012; Sabaté & Soret, 2014).

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Appendix A

Instagram Posts

Sadia Badiei, @pickuplimes



Modified text: Hi guys! There is a new video on my Youtube channel, filled with vegan breakfast ideas! 🥞 These pancakes are very easy to make with oats, plant-based milk and a banana! Top it off with some fresh fruits and have yourself a brunch at home!

Gaz Oakley, @avantgardevegan



Modified text: Hello everyone! I have a spectacular recipe for a vegan Shepherd's pie for you!

The filling is delicious, made from Shiitake mushrooms, jackfruit, and the secret ingredient ...

Coffee! ☕ Check it out on my Youtube channel now!

Appendix B

List of variables

Attitude:

ATT Bad:Good

ATT Harmful:Beneficial

ATT Unpleasant:Pleasant;

ATT Unenjoyable:Enjoyable

Subjective norm:

SN Friends

SN Family

SN Health experts

SN Colleagues

Perceived behavioral control:

PBC Personal Control

PBC Capability

Awareness:

AW Health

AW Environment

AW Ethics

Importance:

IMP Health

IMP Environment

IMP Ethics

Appendix C

Correlations for awareness and importance

Table 1

		INTENTION	INTENTION
			Likely
AW Health	Pearson Correlation	.318**	.263**
	Sig. (2-tailed)	.000	.003
AW Environment	Pearson Correlation	.218*	.219*
	Sig. (2-tailed)	.016	.015
AW Ethics	Pearson Correlation	.227*	.226*
	Sig. (2-tailed)	.012	.012
EX Environment	Pearson Correlation	.483**	.444**
	Sig. (2-tailed)	.000	.000
EX Health	Pearson Correlation	.576**	.554**
	Sig. (2-tailed)	.000	.000
EX Ethics	Pearson Correlation	.518**	.520**
	Sig. (2-tailed)	.000	.000

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

Appendix D

Correlations for diet and stage of change

Table 2

		INTENTION	
		INTENTION	Likely
DIET	Pearson Correlation	.092	.152
	Sig. (2-tailed)	.312	.094
STAGE OF CHANGE	Pearson Correlation	.678**	.650**
	Sig. (2-tailed)	.000	.000

**. Correlation is significant at the 0.01 level (2-tailed).

Appendix E

Bivariate correlations

Table 3

		INTENTION	INTENTION Likely
ATT	Pearson Correlation	.581**	.488**
Bad:Good	Sig. (2-tailed)	.000	.000
ATT	Pearson Correlation	.540**	.467**
Harmful: Beneficial	Sig. (2-tailed)	.000	.000
ATT	Pearson Correlation	.610**	.530**
Unpleasant: Pleasant	Sig. (2-tailed)	.000	.000
ATT	Pearson Correlation	.587**	.543**
Unenjoyable: Enjoyable	Sig. (2-tailed)	.000	.000
SN	Pearson Correlation	.502**	.539**
Friends	Sig. (2-tailed)	.000	.000
SN	Pearson Correlation	.434**	.490**
Family	Sig. (2-tailed)	.000	.000
SN	Pearson Correlation	.405**	.384**
Health experts	Sig. (2-tailed)	.000	.000
SN	Pearson Correlation	.384**	.428**
Colleagues	Sig. (2-tailed)	.000	.000
PBC	Pearson Correlation	.146	.087
Personal control	Sig. (2-tailed)	.109	.339
PBC	Pearson Correlation	.511**	.534**
Capability	Sig. (2-tailed)	.000	.000

** . Correlation is significant at the 0.01 level (2-tailed).

Note. ATT refers to attitude. SN refers to subjective norm. PBC refers to perceived behavioral control.

Appendix F

Multiple regression

Table 4

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.777 ^a	.604	.568	1.148	.604	16.910	10	111	.000
2	.777 ^b	.604	.572	1.144	.000	.060	1	111	.807
3	.775 ^c	.601	.573	1.142	-.003	.754	1	112	.387
4	.772 ^d	.597	.572	1.143	-.004	1.187	1	113	.278
5	.770 ^e	.593	.571	1.144	-.004	1.157	1	114	.284
6	.765 ^f	.585	.567	1.149	-.007	2.094	1	115	.151

Table 5

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.377	.424		.889	.376
	ATT Bad:Good	.129	.147	.097	.875	.384
	ATT Harmful:Beneficial	.313	.155	.217	2.027	.045
	ATT Unpleasant:Pleasant	.197	.132	.163	1.498	.137
	ATT Unenjoyable:Enjoyable	.163	.125	.137	1.304	.195
	SN Friends	.146	.102	.135	1.432	.155
	SN Family	.227	.100	.207	2.273	.025
	SN Health experts	-.019	.076	-.021	-.245	.807
	SN Colleagues	-.115	.115	-.104	-1.000	.320
	PBC Personal Control	.116	.064	.117	1.794	.076
	PBC Capable	.215	.061	.244	3.538	.001
2	(Constant)	.364	.419		.869	.387
	ATT Bad:Good	.127	.146	.096	.868	.387

	ATT Harmful:Beneficial	.307	.152	.213	2.022	.046
	ATT Unpleasant:Pleasant	.191	.129	.157	1.485	.140
	ATT	.169	.122	.141	1.376	.171
	Unenjoyable:Enjoyable					
	SN Friends	.146	.102	.134	1.431	.155
	SN Family	.223	.098	.203	2.274	.025
	SN Colleagues	-.123	.109	-.112	-1.131	.260
	PBC Personal Control	.113	.064	.115	1.785	.077
	PBC Capable	.215	.061	.244	3.554	.001
3	(Constant)	.316	.415		.761	.448
	ATT Harmful:Beneficial	.403	.105	.280	3.838	.000
	ATT Unpleasant:Pleasant	.201	.128	.165	1.568	.120
	ATT	.177	.122	.148	1.448	.150
	Unenjoyable:Enjoyable					
	SN Friends	.148	.102	.136	1.456	.148
	SN Family	.226	.098	.206	2.305	.023
	SN Colleagues	-.118	.109	-.107	-1.090	.278
	PBC Personal Control	.113	.063	.115	1.783	.077
	PBC Capable	.223	.060	.253	3.724	.000
4	(Constant)	.252	.411		.613	.541
	ATT Harmful:Beneficial	.409	.105	.284	3.904	.000
	ATT Unpleasant:Pleasant	.201	.128	.166	1.569	.119
	ATT	.165	.122	.138	1.358	.177
	Unenjoyable:Enjoyable					
	SN Friends	.097	.090	.089	1.076	.284
	SN Family	.176	.087	.160	2.029	.045
	PBC Personal Control	.117	.063	.119	1.850	.067
	PBC Capable	.223	.060	.253	3.722	.000
5	(Constant)	.301	.409		.737	.463
	ATT Harmful:Beneficial	.440	.101	.305	4.351	.000
	ATT Unpleasant:Pleasant	.206	.128	.170	1.608	.110

	ATT	.176	.121	.147	1.447	.151
	Unenjoyable:Enjoyable					
	SN Family	.228	.072	.208	3.168	.002
	PBC Personal Control	.129	.063	.130	2.055	.042
	PBC Capable	.223	.060	.252	3.708	.000
6	(Constant)	.240	.409		.588	.558
	ATT Harmful:Beneficial	.442	.102	.307	4.351	.000
	ATT Unpleasant:Pleasant	.337	.091	.278	3.698	.000
	SN Family	.234	.072	.213	3.241	.002
	PBC Personal Control	.124	.063	.126	1.974	.051
	PBC Capable	.241	.059	.273	4.095	.000

a. Dependent Variable: Intention.